



Scalar 100

User's Guide

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Introduction

This manual contains information and instructions necessary for the safe operation of the Scalar 100¹ library. Be sure to read all safety and operating instructions contained in the *Safety and Information Guide*, before operating this product.

**NOTE:**

In addition to the safety instructions contained in the *Safety and Information Guide*, local and professional safety regulations apply.

Intended Use

This equipment is designed for processing magnetic tape cartridges. Any other application is not considered the intended use. ADIC shall not be held liable for damage arising from unauthorized use of the library. The user assumes all risk in this aspect.

Basic Rules of Operation

Observe the following basic rules for installation, use, and servicing of the library:

**NOTE:**

This unit is engineered and manufactured to assure your personal safety. Improper use can result in potential electrical shock or fire hazards.

- Adhere to all warnings on the product and in the operating instructions.
- Follow all installation and operating instructions.
- Connect the library to a power source only of the type directed in the operating instructions or as marked on the product label.
- Do not attempt to service the product beyond that described in this manual. All other servicing should be referred to qualified service personnel.
- Do not use oil, solvents, gasoline, paint thinners, or insecticides on the unit or near the unit. Vapors from these types of chemicals can damage the tape media components.
- Hold the AC power plug by the head when removing it from the AC source outlet; pulling the cord can damage the internal wires.
- Follow the guidelines established in [Finding a Location on page 3-12](#) when positioning the library.

1. Scalar 100 is a trademark of ADIC. Throughout the remainder of this document, we refer to Scalar 100 library as Scalar 100

Intended Audience

This manual is intended for operators, trained customer specialists, and maintenance personnel who interact with the Scalar 100. This manual provides sufficient training information to operate your library. We recommend that you read this manual thoroughly before using your library.

Only qualified personnel should perform the following procedures on the equipment:

- Prepare for operation
- Set-up
- Start-up
- Operate
- Shutdown
- Maintenance
- Restart

**CAUTION:**

Operation of the library by untrained personnel can lead to equipment malfunction and can void the warranty.

**WARNING:**

SOME WORK AND MODIFICATIONS CAN ONLY BE PERFORMED WITH THE APPROPRIATE QUALIFICATIONS AND TRAINING (FOR EXAMPLE, REPLACEMENT OF THE POWER SUPPLY). MOST IMPORTANTLY, KNOW AND OBSERVE ALL SAFETY RULES BEFORE WORKING WITH THE EQUIPMENT.

Explanation of Symbols and Notes

The following symbols and highlighted passages note important information:

Symbol	Damage to	Notice	Definition	Consequence
	Person	WARNING:	Imminent hazardous electrical situation	Death or serious injury
	Material	CAUTION:	Potential damaging situation	Possible damage to the product, data, or environment
		NOTE:	Indicates important information that helps make better use of the system	No hazardous or damaging consequences

Description

The Scalar 100 automates the retrieval, storage, and control of tape cartridges. It is designed for use in a standard office environment, with a fully finished appearance, or as a rackmounted unit.

The library supports many different drive types and, depending on the type of drive, can contain up to eight drives. There is a mailbox on the front door for inserting and removing tapes. In addition, the Operator Panel on the front of the library allows you to fully control and configure your library.

For specific information about your library, including data capacity and tape cartridge capacity, see [Specifications on page 13-103](#).

Figure 2-1 Scalar 100



Library Configurations

Your library supports the following tape drives:

- AIT type drives (AIT-2 HVD & LVD, AIT-3 LVD)
- DLT type drives (7000 HVD, 8000 HVD & LVD, SDLT 220 HVD & LVD, SDLT 320 LVD)
- LTO type drives (LTO-1 HVD & LVD, LTO-2 LVD)

The drive type affects the tape cartridge and overall storage capacity. For specific information about your library, see [Specifications on page 13-103](#).



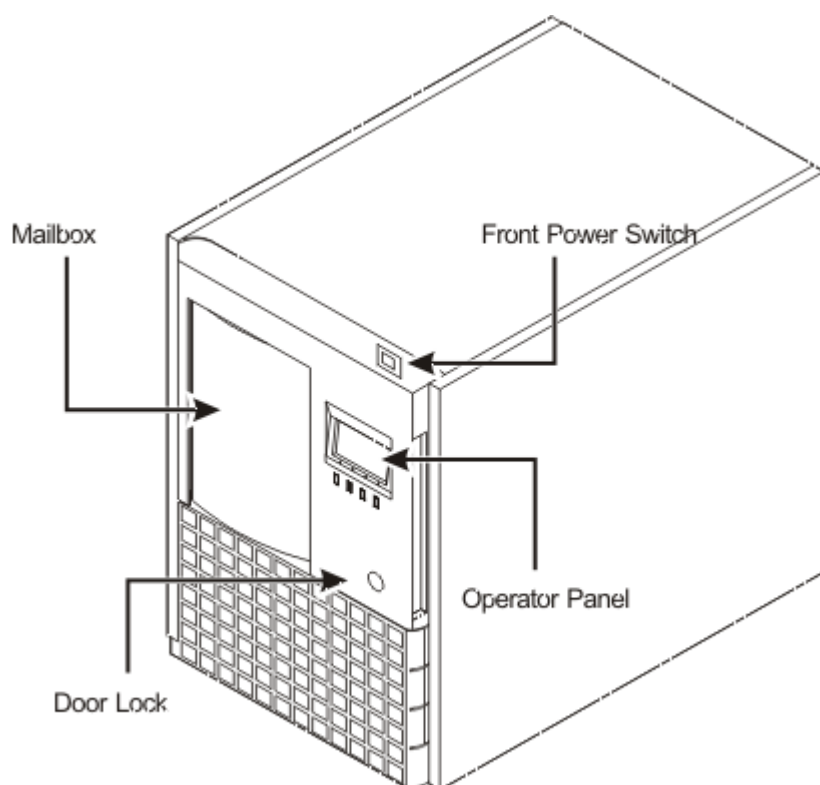
NOTE:

The tape library does not support mixing different drive types in the same library. This includes different models of the same drive types. For example, SDLT-220 drives cannot be mixed with SDLT-320 drives.

Front Panel Components

The following graphic shows the front panel components. The following text describes the components in detail.

Figure 2-2 Front Panel Components



Front Power Switch

There are two power switches on the library: the front power switch and the rear power switch.

Turning off the front power switch removes power from the internal electronics and removes power from the drives, but the library still contains standby power. The standby power can only be turned off by the rear power switch. See [Rear Power Switch on page 2-7](#).

**WARNING:**

TO COMPLETELY REMOVE ALL POWER, EITHER USE THE REAR POWER SWITCH OR DISCONNECT THE POWER CORD FROM THE ELECTRICAL SOURCE.

Door Lock

The Scalar 100 door lock protects your data from the risk of tampering and prevents unauthorized personnel from entering the mechanical area of the Scalar 100 where serious injury could occur.

When locked, the library door can only be opened from the outside with a key. Authorized personnel are responsible for the security of the key. When shipped, the front door is locked. The key is attached to the back panel of the library.

**WARNING:**

THE MECHANICAL COMPONENTS OF THE LIBRARY CAN CAUSE SERIOUS INJURY. ACCESS TO THE LIBRARY SHOULD BE RESTRICTED TO AUTHORIZED PERSONNEL ONLY.

Mailbox

The Mailbox allows you to import and export tape cartridges without interrupting the normal operation of the library; however, it can also be configured as additional storage slots.

There are two models of the Mailbox:

- The standard Mailbox has a capacity of one or two tape cartridges. (One tape cartridge for DLT/SDLT and LTO libraries and two tape cartridges for AIT libraries.)
- The optional bulk load Mailbox enables you to load multiple tape cartridges at one time.
 - AIT bulk load Mailboxes holds 16 tape cartridges in two magazines.
 - LTO bulk load Mailboxes holds 12 tape cartridges in two magazines.
 - DLT/SDLT bulk load Mailbox holds 10 tape cartridges in two magazines.

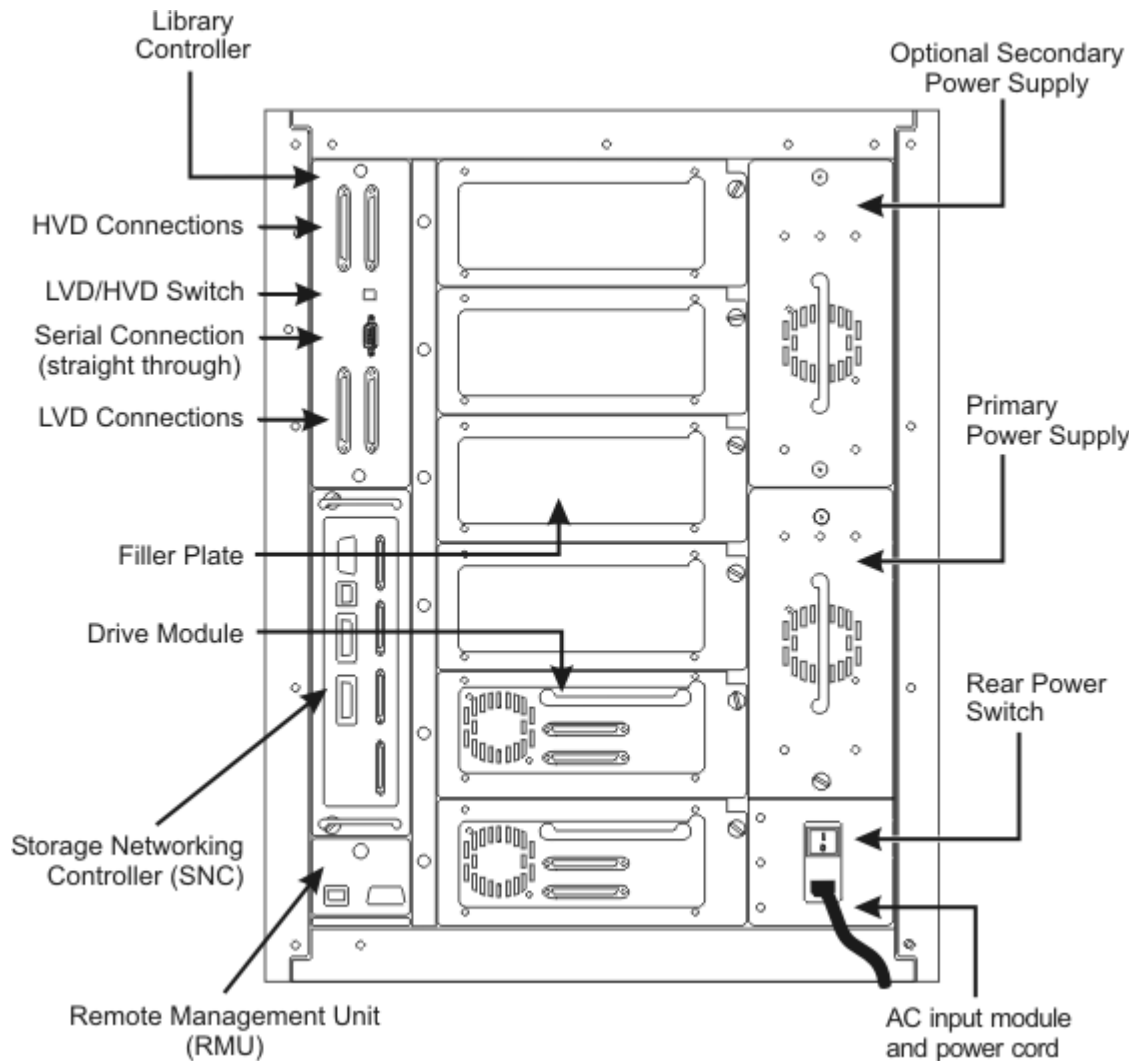
Operator Panel

The Operator Panel is an LCD screen that enables you to monitor, configure, and service your library. For detailed information on the Operator Panel, see [Using the Operator Panel on page 5-31](#).

Back Panel Components

The following graphic shows the back panel components. Where appropriate, following the graphic, the components are described in detail.

Figure 2-3 Back Panel Components



Library Controller

The Library Controller controls all operations in the library, including the interaction between the library and operators. The library firmware on the Library Controller creates and maintains the library configuration, the physical location of the robotic system, and the inventory of cartridges. The resulting database is maintained in Library Controller memory.

The SCSI connections are located on the Library Controller. A switch on the Library Controller allows you to switch your library between LVD and HVD connections.

Rear Power Switch

Turning off the rear power switch removes all power from the library. Turn off the rear power switch whenever you are servicing your library. In the event of danger to personnel or property, immediately turn off the rear power switch.

However, except in emergencies, use the normal shutdown procedure before switching off the rear power switch. ADIC is not responsible for damage caused by improper use of the rear power switch. This risk lies entirely with the user.

Remote Management Unit

The Remote Management Unit (RMU) allows remote access to the library via a web browser. The RMU resides in each system and is pre-installed at the factory.

The RMU performs the following functions:

- Provides remote operation of all library Operator Panel functions via a Web browser.
- Allows the user to check the status of the system, firmware levels, and other useful information.
- Updates RMU, drive (LTO only), and Library Controller firmware.
- Supports Simple Network Management Protocol (SNMP) version 1.0 and acts as an SNMP-server, generating SNMP traps and responding to SNMP requests.
- Supports ADIC Library Management Information Base (MIB) version 2.0.
- Detects a power loss and generates an SNMP trap for notification.
- Enables the retrieval of library logs and library, drive, and RMU diagnostic files.
- Allows RMU configuration changes such as network, users, and date/time changes.
- Provides online access to documentation.

For information on using the RMU, see [Using the Remote Management Unit on page 11-79](#).

Storage Networking Controller

The Storage Networking Controller (SNC) is an optional component of the library. It provides fibre channel to SCSI connectivity. To learn more about the SNC, visit www.adic.com or reference the *SNC 5101 for the Scalar 100 User Manual* on the product CD.

Drive Modules and Filler Plates

A drive module is the component that holds the drive and the SCSI connections between the drive and the library. Filler plates cover empty drive slots to prevent debris from entering the library.

Internal Components

The robotic system and magazines are the key internal components of the Scalar 100.

Robotic System and Barcode Scanner

The robotic system identifies and moves cartridges between the storage slots, tape drives, and the Mailbox. The robotic arm (picker) has picker fingers that enable it to grab media cartridges and move them into position along X, Y, and Z motion coordinates.

Each tape cartridge contains a barcode that is read by the barcode scanner during the inventory process. The barcode scanner is also used during the teaching process where it reads the fiducial labels to identify the types of storage and tape drives installed in the library.

Every tape cartridge must have a machine and operator-readable barcode label attached to it. This barcode identifies the volume serial number (volser). The library stores the physical location of the tape cartridge in an inventory database based on the volser. All library or host requests reference the location of tape cartridges based off of this barcode number.

Tape Magazines

Tape cartridges are stored in removable magazines in the library. You cannot insert cartridges improperly. The magazines only accept tape cartridges placed the correct orientation. Once inserted, the tape cartridges will be retained in the magazine even when the magazine is inverted and shaken lightly.

Each magazine has a fiducial barcode label at the bottom of the magazine. This label is read by the barcode scanner during a teach process.

Slot Numbering

Every slot in the library has a distinct number that identifies it. The format is: column/magazine/slot.

The values are assigned as follows:

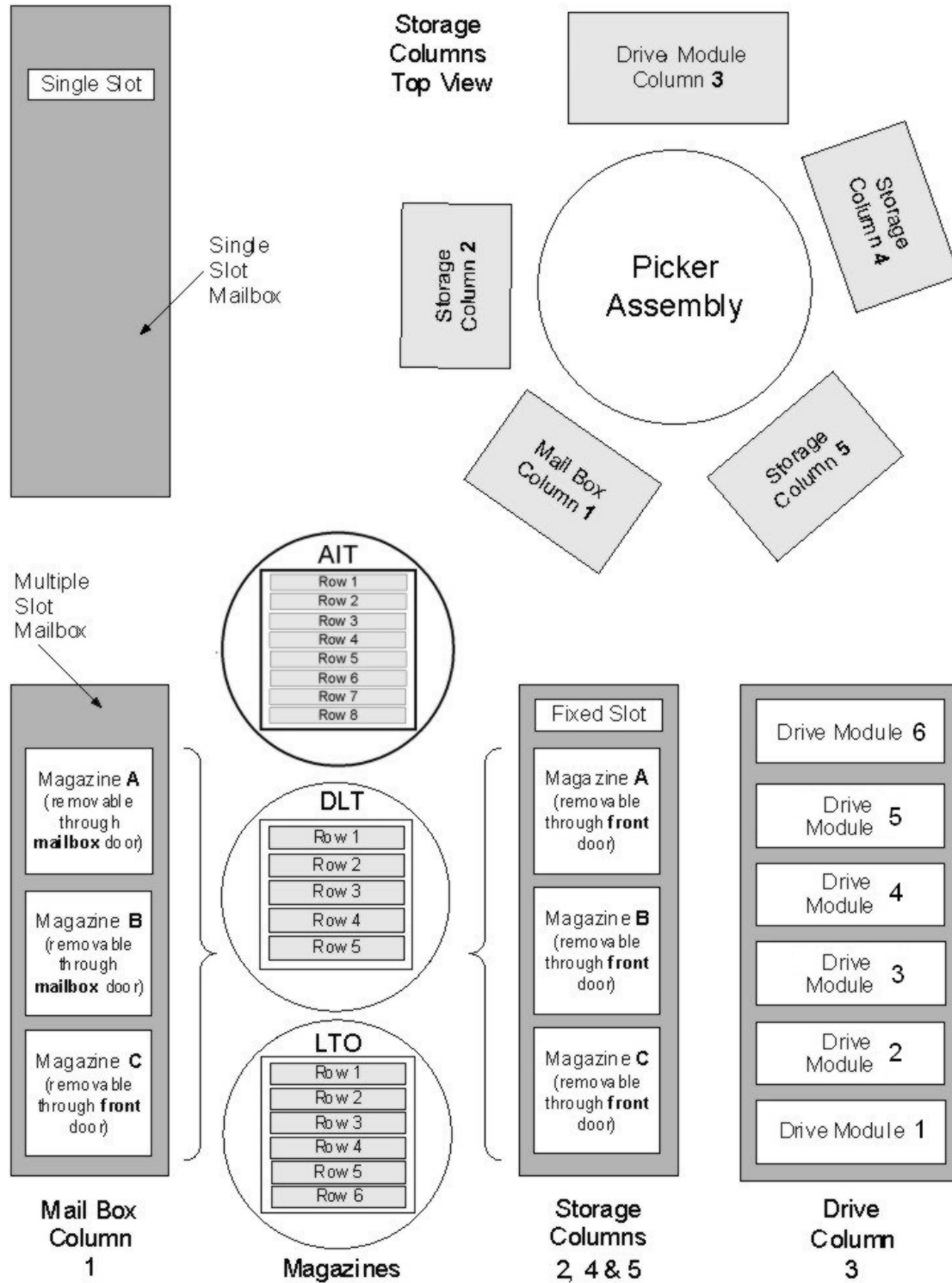
- The columns are numbered **1** to **5** clockwise from the mailbox column.
- The magazines within each column are designated **A** to **C** from top to bottom.
- The slots are numbered as follows:
 - The slots within each magazine are numbered **1** to **N** from top to bottom (where N is the number of tape cartridges allowed for that media type).
 - The fixed slots in columns 2, 4, and 5 that do not have a magazine designation are always numbered **0**. For example, the coordinate for the fixed slot in column 2 would be "2 - 0".



NOTE:

For reference, the location for the picker is identified as [0 @ 0] on the Operator Panel.

Figure 2-4 Storage Slot Numbering



Drive Module Numbering

The drive modules are numbered **1** to **N** from bottom to top, where N is the number of drives allowed for that media type.

SCSI Connections

The tape library is a SCSI target device that can be connected to either a SCSI-2 Low Voltage Differential or High Voltage Differential SCSI bus. You can set the SCSI device using the switch located on the Library Controller. Both ends of the bus must be terminated. A terminator is shipped with each library.

The library requires SCSI-2 P cables with 68-pin D-connectors. (When attaching to a 1-byte host, a 1-byte to 2-byte interposer is required.) Although the library can be attached to a wide SCSI bus, it is not a wide SCSI device and its SCSI ID must be in the range of 0 to 7. The default SCSI ID for the library is 0.

The library can also be connected to a Fibre Channel Host Storage Area Network (SAN) via the Storage Networking Controller (SNC). The SNC translates the SCSI protocol between the two media types.

Setting up your Scalar 100

Setting up your library includes actions such as unpacking, connecting power cords and SCSI cables, setting SCSI IDs, and preparing the host computer. The actions discussed here are those you would need the first time you set up your library and if your library is ever moved or reconfigured.

Information on turning on and off the library, is located in [Running your Library on page 7-49](#), as it is part of everyday tasks.

Quick Start Guide

For simple setup instructions, refer to the Quick Start Guide available on the *Scalar 100 Documentation and Software CD* or as a printed document in your product box. For more detailed instructions, refer to the [Getting Started Road Map on page 3-11](#).

To view the Quick Start Guide, you need to have Adobe® Acrobat® Reader® installed. Go to www.adobe.com/acrobat/ to download a free copy.

Getting Started Road Map

To set up your Scalar 100 for the first time, complete all the basic steps listed here.

1. Find a location for your library.
See [Finding a Location on page 3-12](#).
2. Unpack your library.
See [Unpacking your Library on page 3-12](#).
3. Install any optional or additional hardware that you ordered for your library.
See [Installing and Removing Hardware on page 4-17](#).
4. Connect the power cords and SCSI cables.
See [Connecting the Power and SCSI Cables on page 3-13](#).
5. Turn on the library.
See [Turning on the Library on page 7-49](#).
6. If necessary, set the SCSI IDs for the library and drives so that they are unique from any other device on the SCSI bus.
See [Configuring your Library on page 8-57](#).
7. Prepare the host system.
See [Preparing the Host on page 3-14](#).
8. Verify communication between the library and the host.
See [Verifying Communication with the Host on page 3-15](#).

Finding a Location

When positioning the library, consider the following:

- The location must provide adequate front and rear ventilation (at least two inches, the space provided by the cabling will suffice).
- Situate the product away from heat sources such as radiators, heat registers, furnaces, or other heat-producing appliances.
- Ensure a power source (only of the type directed in the operating instructions or as marked on the product label) is available.
- Route the AC line cord so that it is not likely to be walked on or pinched by items placed upon or against it, paying particular attention to the cord at the wall receptacle, and the point where the cord exits from the product.
- Ensure that objects will not fall and liquids are not spilled into the product's enclosure through openings.
- Do not position in an area that will expose the unit to moisture or high temperatures or extreme low temperatures.
- Keep the unit away from direct strong magnetic fields, excessive dust, and electronic/electrical equipment that generate electrical noise.
- Position the unit on a firm, level surface free from vibration.

Unpacking your Library

**CAUTION:**

If you need to return your library, you must ship it in the original or equivalent packing materials or your warranty may be invalidated.

**CAUTION:**

Do not move the Picker Assembly along the rotary axis by hand as it will be damaged. The Picker Assembly can be rotated by turning the gear on the Rotary Motor by hand.

To unpack your library

1. Unpack all items from the carton.
Save the packing materials in case you need to move or ship the system in the future.
2. Inspect the items that came with your library and ensure none are damaged.
3. Complete either the written registration card or register the product on the ADIC website at www.adic.com.

The Scalar 100 serial number is located on the Product Label on the back of the library and on the inside of the front door.

4. Remove the key from the rear panel of the library. Unlock and open the front door.

5. Remove the interior packaging or securing material from the library to allow picker movement. (Make sure to remove the rubber band from around the picker.)
6. Install tape cartridges into magazines.

Connecting the Power and SCSI Cables

Part of the setup process is connecting the power and SCSI cables. When setting up your library, ensure that the last device on the SCSI bus is properly terminated. An appropriate terminator is shipped with each library. For specific SCSI connection information, see [SCSI Connections on page 2-10](#).



NOTE: The default SCSI ID is 0 for the Library Controller, this default value will appear when a new SCSI PCBA is installed or after a firmware update.

To connect the power and SCSI cables

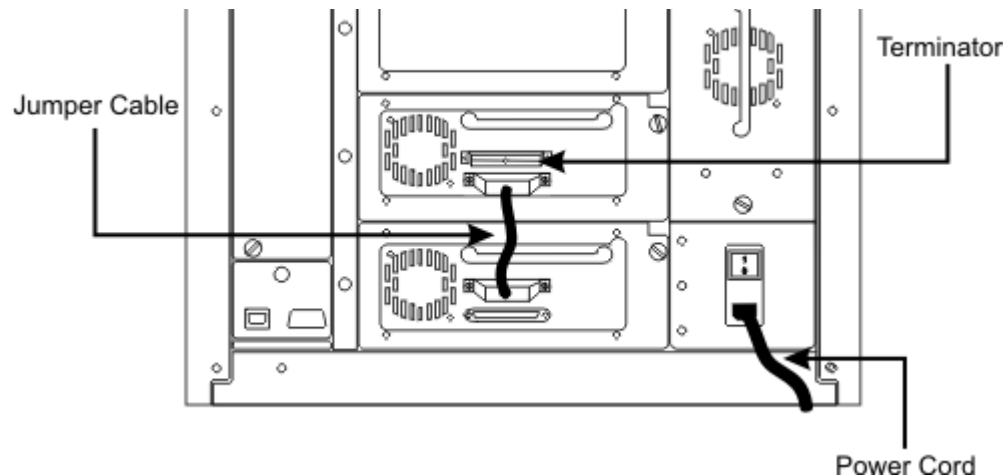
1. Connect the power cord to the power outlet on the rear of the library.
2. On the bottom most drive, connect a jumper cable to the top SCSI connector and then to the bottom SCSI connector on the drive above it. Repeat this for all drives in the SCSI bus.

If you have more than two drives, split the drives between SCSI buses so that there are no more than two drives per SCSI bus. See the following steps.



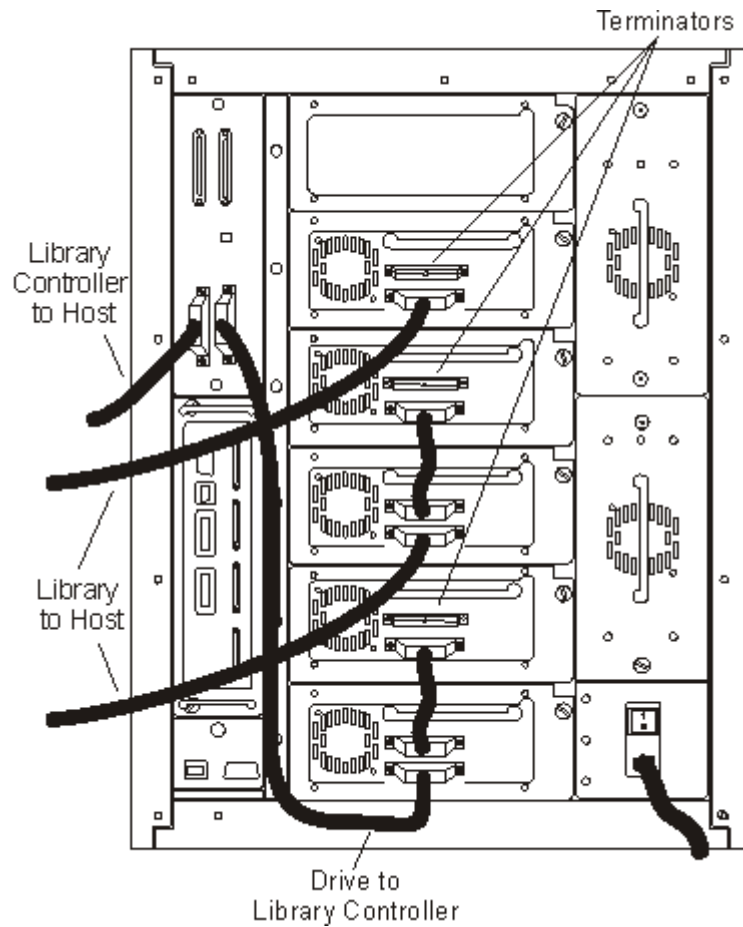
NOTE: AIT libraries cannot have tape drives installed in the bottom-most or top-most drive module slots.

3. Terminate the last device(s) on the SCSI bus(es).



4. Install the cables between the bottom drive and the Library Controller and between the Library Controller and the host.

If you have more than one SCSI bus, connect a cable between the bottom drive on the SCSI bus to the host.



Preparing the Host

If necessary, install a SCSI host system adapter, software, and compatible driver(s). Refer to the manuals for the host system and SCSI host system adapter for detailed instructions. In addition, follow these general guidelines:

- When the host server system is turned on, install the software, and/or driver(s) that are compatible with the library.
- If the host server system is connected to a network, check with the system administrator before turning off the power to the host.
- Prevent electrostatic discharge (ESD) by following proper procedures. Always use wrist-grounding straps and anti-static mats when handling internal components.
- Make certain the host server system has an open expansion slot.

Host Coordinate System

To manipulate the media within the library, the host must reference each movement with source and target designations. This is done via element addressing, which specifies precisely which slots within the library are to be used. The following addressing scheme is used for the library. These values may need to be inputted into your host application.

Table 3-1 Element Addressing

Slot Type	Starting Address
Storage	4096 : (0x1000)
Mailbox	16 : (0x0010)
Drives	256: (0x0100)
Picker	1: (0x0001)

Installing a SCSI Adapter

To communicate with the library, your host computer must have a SCSI adapter. If your host computer does not have SCSI capability, you will need to install a SCSI adapter. For installation instructions, refer to the manual that comes with the adapter.

Verifying Communication with the Host

Read the following to learn how to verify communication between the library and the host. For more information on verifying the connection of SCSI devices, consult the operating system documentation.

To verify communication between the library and host

- Verify the connection between the library and host system by making sure that the operating system of the host server recognizes the library. In Microsoft® Windows®, this is done as follows:
 - In Windows NT®: **Settings > Control Panel > SCSI Devices**
 - In Windows 2000: **Settings > Control Panel > System > Hardware > Device Manager > Tape Drive or Medium Changers**

Installing and Removing Hardware

Additional hardware is available that allows you to configure the library to meet your specific needs. The available hardware includes the following:

- Rackmounting hardware (Rackmount Kit)
- Side Panels (Floor Model Kit)
- Casters (Floor Models only)
- Additional Drives
- Secondary Power Supply
- A Bulk Load Mailbox
- Additional Storage Columns (each column can hold up to three magazines)
- Storage Networking Controller (SNC)
 - For information on the SNC, see the *SNC 5101 for the Scalar 100 User Manual* on the product CD or available at www.adic.com.

Rackmounting your Library

If you are rackmounting your library, use the Rackmounting Kit that is available from ADIC. The Scalar 100 requires 14U space in a standard 19 inch rack.

Before rackmounting your library, read the following guidelines:

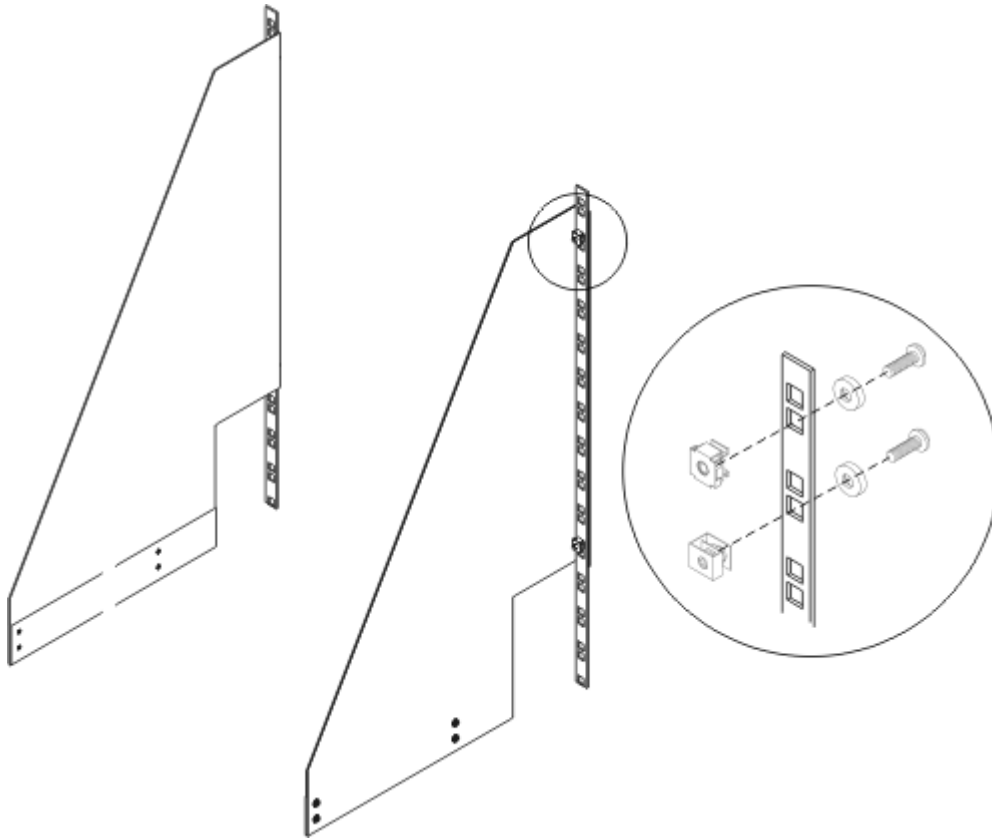
- For continued safe operation, the recommended maximum internal ambient temperature of the rack should not exceed 40° C.
- During installation of a rackmounted unit, do not block or otherwise restrict airflow to the power supply front or rear vents.
- To maintain rack stability, make certain mechanical loading of the rack results in a low center of gravity.
- Before installing a unit into a rack, consider the overall loading of the branch circuit supplying power to the rack. See [Specifications on page 13-103](#) for the library power requirements.
- Because this unit is intended to be attached to an earth ground, ensure that a reliable path to earth ground is maintained within the rack.

Tools required:

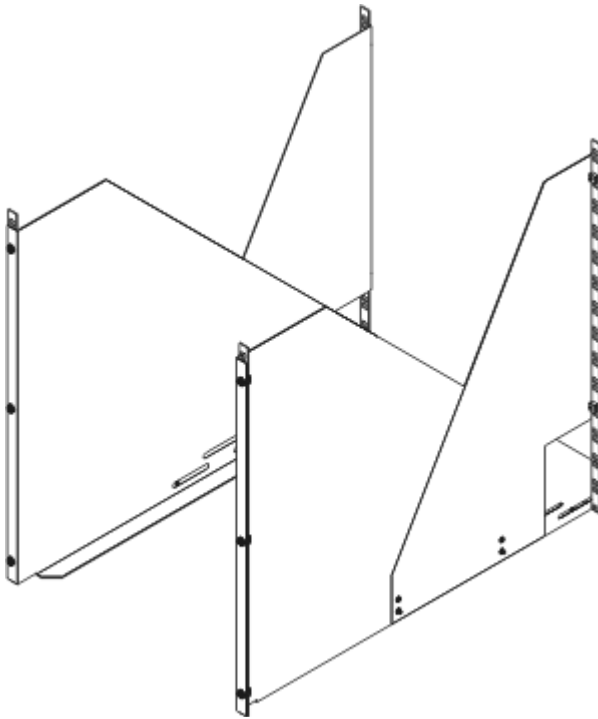
- Phillips screwdriver, 3/8 nut driver
- T20 Torx driver

To rackmount your library

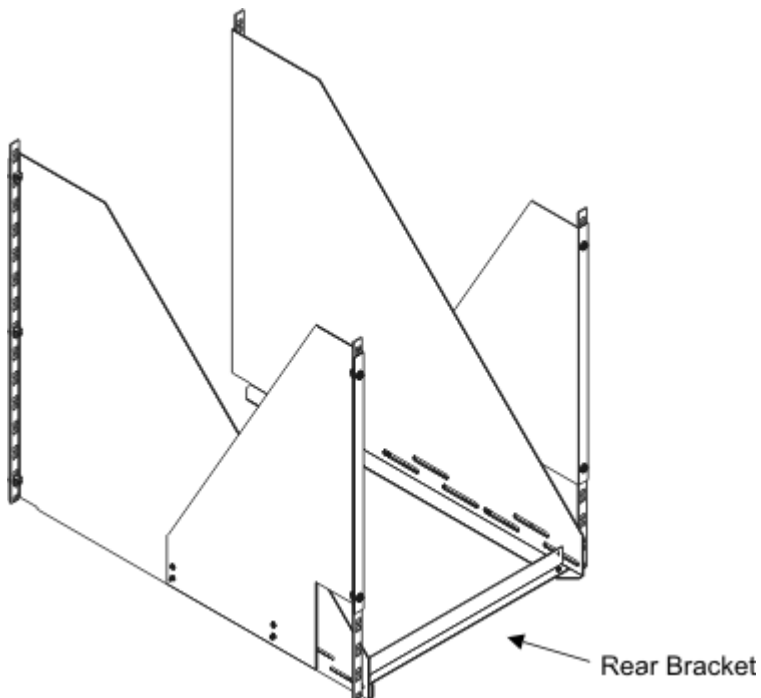
1. Ensure space is available in the rack (14U space in a standard 19 inch rack). Measure and mark the holes to simplify the installation process.
2. Install the rear rackmount hardware by attaching the sheet metal to the rear rack. Depending on the type of rack, use either the cage nut or the clip nut.



3. Install the front rackmount hardware by attaching the sheet metal to the front rack.



4. Secure the front hardware to the rear hardware by installing four screws on each side.
5. Complete the rackmount hardware installation by attaching the rear bracket to the rackmount hardware.



6. Remove the four rubber feet or casters from the bottom of the library by removing the securing screws.

7. Remove the side covers. Looking at the rear of the library, unscrew the four Phillips screws that secure each of the side covers (eight screws total). After removing the Phillips screws, open the front door and slide the covers off the library.
8. Remove all drives and the DC power supplies from the library to reduce its weight. Each of these items can be easily removed by loosening the captive thumbscrews and sliding the item out of the chassis.

**WARNING:**

EVEN WITH THE ABOVE COMPONENTS REMOVED, THE SCALAR 100 WEIGHS IN EXCESS OF 150 LBS (65 KGS) AND REQUIRES TWO PERSONS TO PROPERLY LIFT AND POSITION IT IN A RACK.

9. Standing at the front of the rack, use the handles on both sides of the Scalar 100 to lift and position the library onto the rackmount hardware.
10. Slide the library into the rack until it stops.

Installing Side Panels

Your library can be setup as a floor model or a rackmount library. Read the following instructions to configure your library as a floor model unit, by installing side panels.

Tools required:

- Large flat blade screwdriver or 3/8 nut driver
- Phillips screwdriver

To set up a floor model library

1. Verify that the Scalar 100 library is turned off using the main switch on the rear of the library. Turning off power using only the front panel switch is not sufficient.
2. Fully open the front door of the library.
3. Install the side panel by capturing the vertical flange on the front of the library. The four holes on the side panel should align with the four holes in the rear of the library.



NOTE: Both side panels are identical and can be installed on either side of the library.

4. Using a Phillips screwdriver, install the four thread-cutting screws contained in the Floor Model Kit.
5. Repeat steps 1 through 4 to install the other side panel.
6. Close the front door of the library.

7. If you are installing casters on this library, refer to [Installing Casters on page 4-21](#). Otherwise, move the library to its permanent location.

If the Scalar 100 is installed on a raised floor with forced air below, ensure that a floor cutout is beneath the library.

Installing Casters

Casters are an optional feature that are for use only with floor model library configurations.

Tools required:

- Large flat blade screwdriver or 3/8 nut driver
- Phillips screwdriver

To install casters

1. Place the Scalar 100 on its side for this procedure. Use the sling shipped with the library to tip the library onto its side.
2. Using a Phillips screwdriver, remove the four rubber feet from the bottom of the library.
3. Install the two fixed casters to the back of the library with four bolts.
4. Install the two swivel casters on the front of the library with four bolts. Lock the two front casters in place.

Installing/Removing a Drive

Follow the procedures below to install or remove a drive.

Installing a Drive

When installing drives into your library, note that drive types cannot be mixed. For example, SDLT-320 drives cannot be installed with SDLT-220 drives and LTO-1 drives cannot be installed with LTO-2 drives.



NOTE:

If you have difficulties installing or replacing a drive, try resetting the drive and/or rebooting the library and host. Also, ensure that the new drive uses a unique SCSI ID.

Tools required:

- None

To install a drive

1. From the rear of the library, find the lowest available drive slot. Loosen the two thumbscrews on the filler plate and remove the filler plate. Store the filler plate in a safe location for future use.

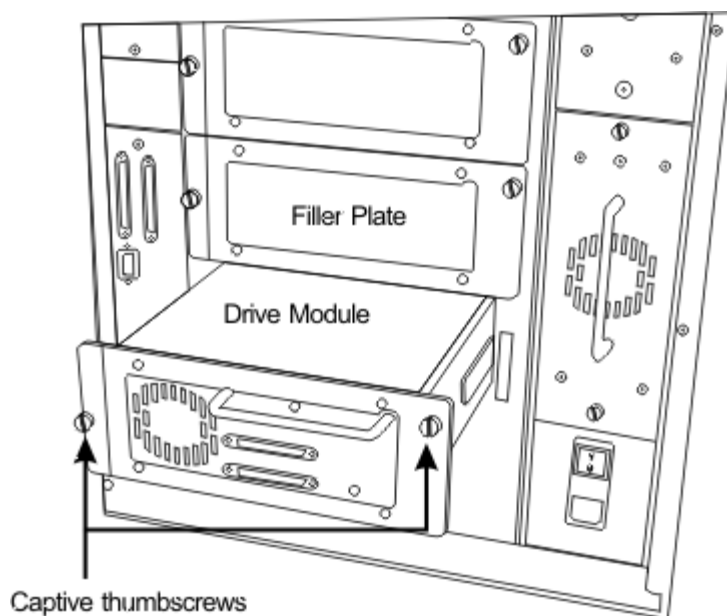
Note that AIT tape drives cannot be installed in the bottom-most or top-most drive slot.

2. Slide the drive module into position and tighten the two captive thumbscrews.



NOTE:

If you have more than two drives, when cabling the library, split the drives between SCSI buses so that there are no more than two drives per SCSI bus. See [Connecting the Power and SCSI Cables on page 3-13](#) for more information.



Removing a Drive

Use the following instructions to remove a drive.

Tools required:

- None

To remove a drive

1. Take the tape drive offline (in the host software).
2. If your library is an LTO HVD, prepare the library using the Operator Panel: **Main menu > More > Service > Drives > Repair > Remove**.
3. Loosen the two captive thumbscrews from the drive and slide the drive out using its handle.
4. Unless you are immediately replacing the drive, install the filler plate (that you removed when you installed the drive) to the drive slot.

Replacing a Drive

Use the following instructions to replace a drive.



NOTE: If you have difficulties installing or replacing a drive, try resetting the drive and/or rebooting the library and host. Also, ensure that the new drive uses a unique SCSI ID.

To replace a drive

1. Remove the existing drive. (See [Removing a Drive on page 4-22](#).)
2. Install the new drive. (See [Installing a Drive on page 4-21](#).)
3. If your library is an LTO HVD, notify the library that a drive has been replaced using the Operator Panel:

Main menu > More > Service > Drives > Repair > Replace



NOTE: Note that the drive will remain off the bus until the library has set the SCSI ID of the drive.

Installing a Secondary Power Supply

Use the following instructions to install a secondary power supply.

Tools required:

- none

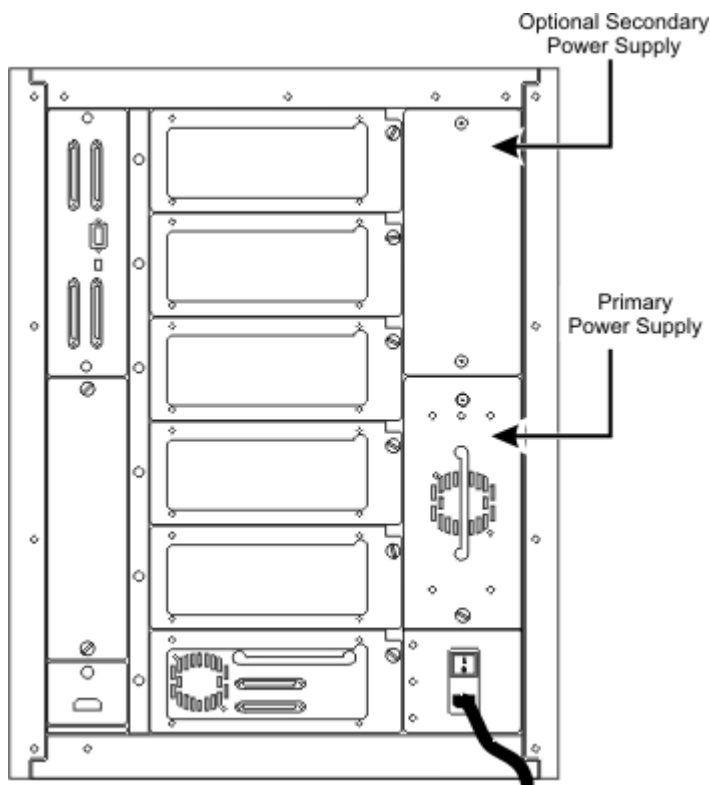
To install a secondary power supply

1. On the rear of the library, find the secondary power supply slot. Loosen the two thumbscrews on the cover plate and remove the cover plate.



WARNING:

LIVE AC VOLTAGE IS PRESENT ON THE DC POWER SUPPLY CONNECTOR AT THE REAR OF THE COMPARTMENT. EXERCISE EXTREME CARE WHEN WORKING IN OR NEAR THE DC POWER SUPPLY COMPARTMENT.



2. Slide the power supply into position until it mates with the power distribution PCBA and tighten the two captive thumbscrews.

Installing Bulk Load Mailbox

To install a bulk load Mailbox you must first remove the standard Mailbox.

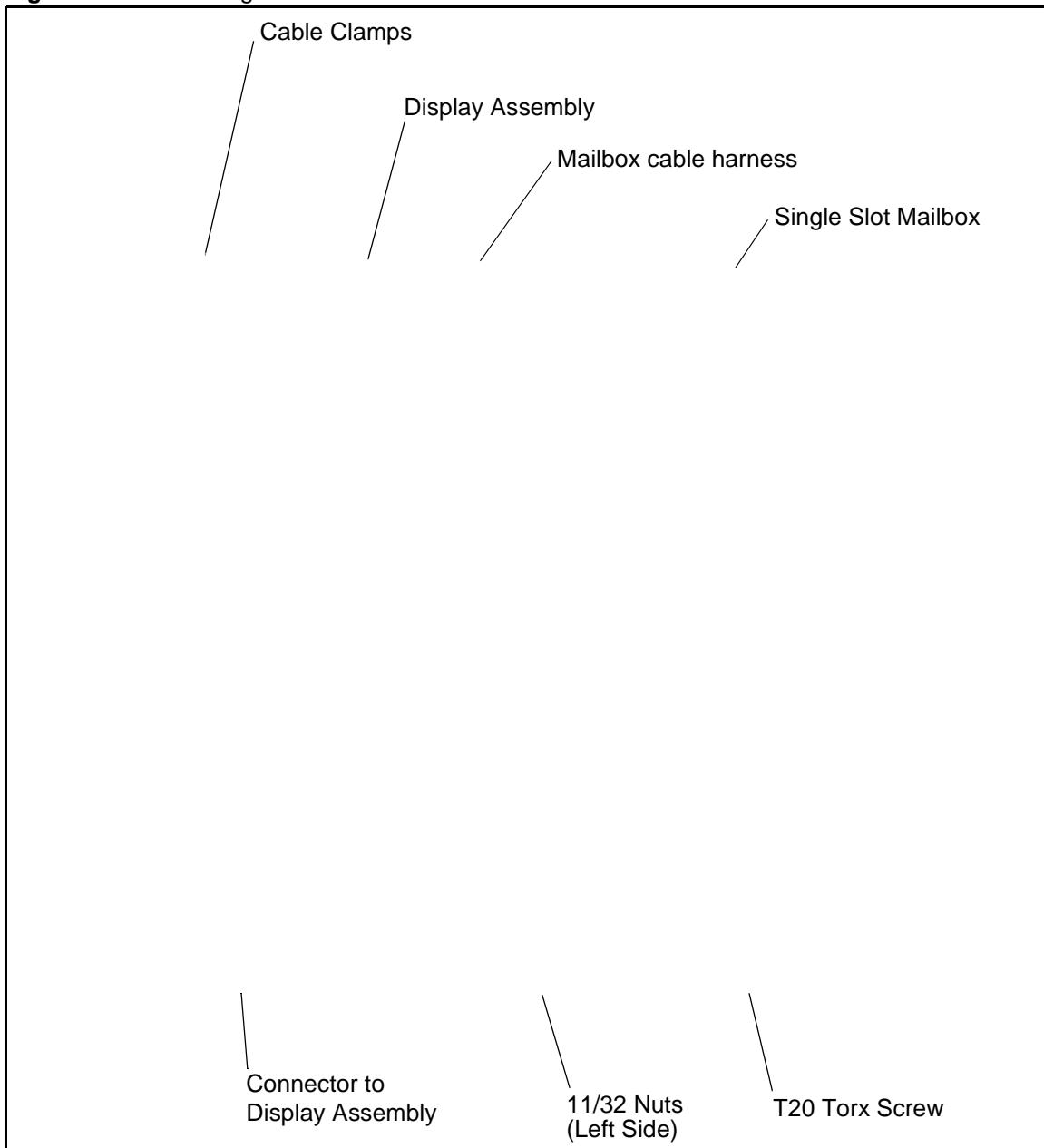
Tools required:

- T20 Torx driver
- #2 Phillips screw driver
- #2 and 11/32 nut driver

Removing the Standard Mailbox

Use [Figure 4-1 on page 4-25](#) to assist you in removing the standard Mailbox.

Figure 4-1 Removing a Standard Mailbox

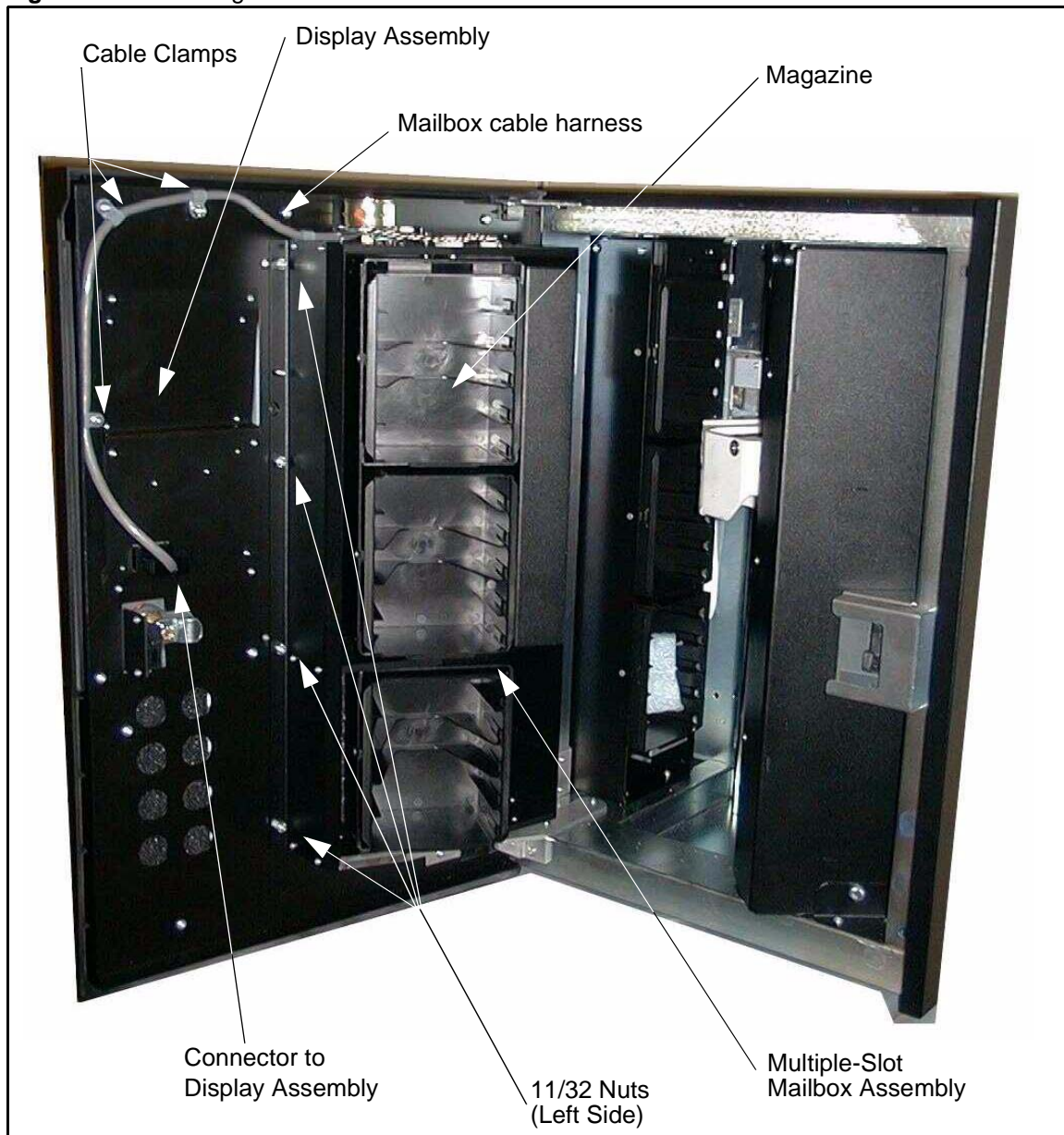


To remove the standard Mailbox

1. Turn off the Scalar 100 library. (Both the front and the rear power switches.)
2. Open the library front door. Remove the tape cartridge(s) from the standard Mailbox.
3. Remove the three Mailbox cable clamps. Two of the cable clamps are attached to the door with #2 Phillips screws and one is attached with a 11/32 nut. Disconnect the Mailbox cable harness from the display assembly.
4. Remove the five 11/32 nuts that attach the Mailbox assembly to the front door. There are two nuts on the left side and three on the right side.
5. Remove the 11/32 nut from the bottom of the plastic cover and loosen T20 torx screw under the Mailbox door.
6. Remove the Standard Mailbox assembly.
7. Remove the plastic cover by lifting it up and sliding it through the front door.

Installing the Bulk Load Mailbox

Use [Figure 4-2 on page 4-27](#) when installing the bulk load Mailbox.

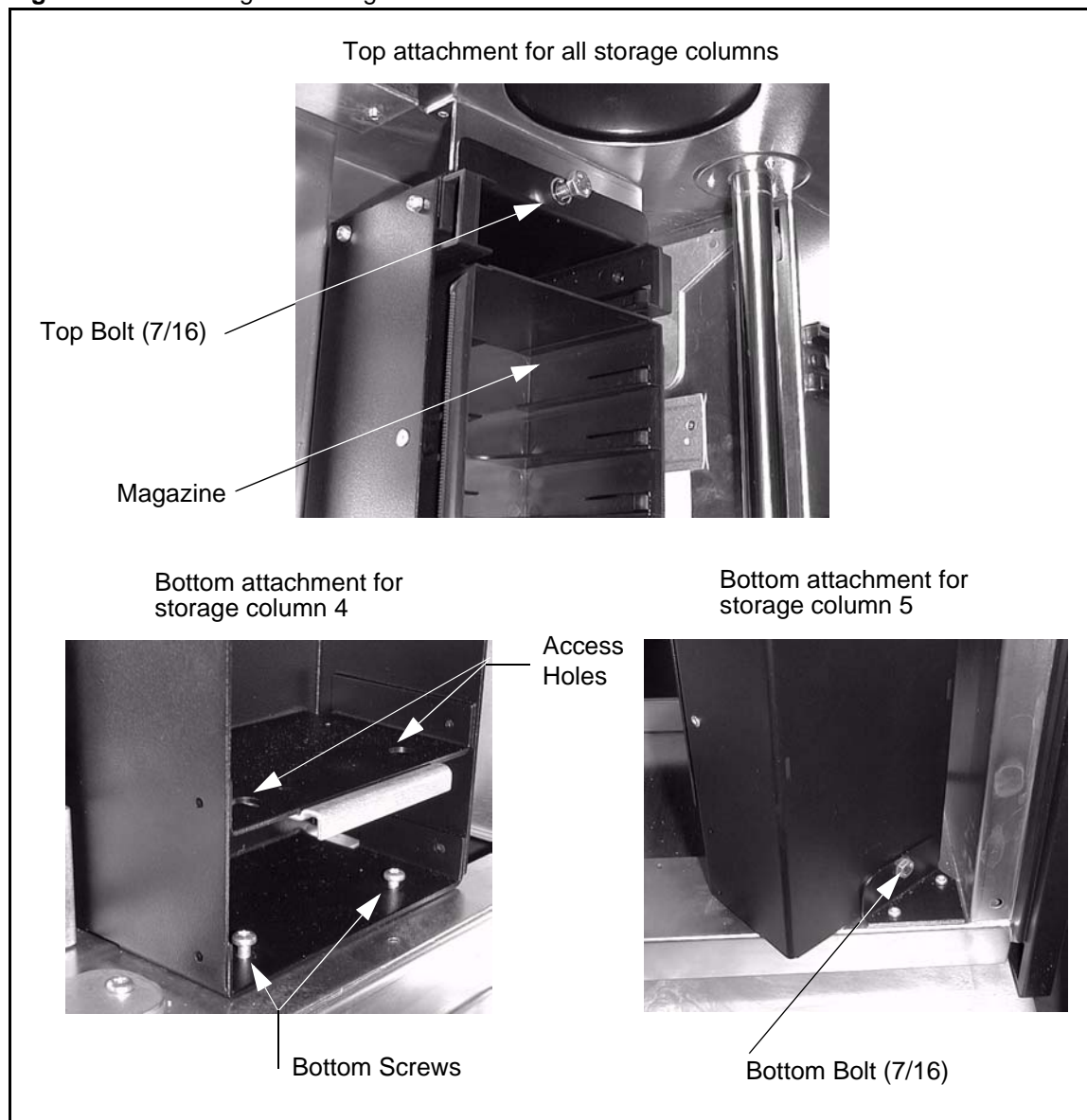
Figure 4-2 Installing a Bulk Load Mailbox**To install a bulk load Mailbox**

1. Attach the bulk load Mailbox to the door using eight 11/32 nuts.
2. Attach the cable clamps using 2 Phillips screws and one 11/32 nuts. Connect cable to the display assembly.
3. Insert magazines and any tape cartridges in the Mailbox.

Installing a Storage Column

Refer to [Figure 4-3 on page 4-28](#) when installing a storage column.

Figure 4-3 Installing the Storage Column



Tools required:

- 11mm or 7/16 nut driver
- T20 Torx driver
- flashlight

To install a storage column

1. Turn off the library by turning off both the front (first) and then the rear power switches.
2. Open the library front door. If necessary, move the picker assembly up the Y-axis to allow room. Slide the storage column in place.
3. Perform one of the following two steps depending on the column you are installing:
 - If you are installing column **4**, use the T20 Torx wrench to tighten the two bottom hex screws that attach the storage column to the bottom chassis.
 - If you are installing column **5**, use the 7/16 nut driver to tighten the bolt that attaches the storage column to the bracket.
4. Install the top bolt using the 7/16 nut driver.
5. Place the magazines in the storage column.

Using the Operator Panel

You can initiate all library functions through the Operator Panel. In addition, the Operator Panel provides access to library status information.

Understanding the Operator Panel

As shown in the following graphic, the Operator Panel is divided into five areas:

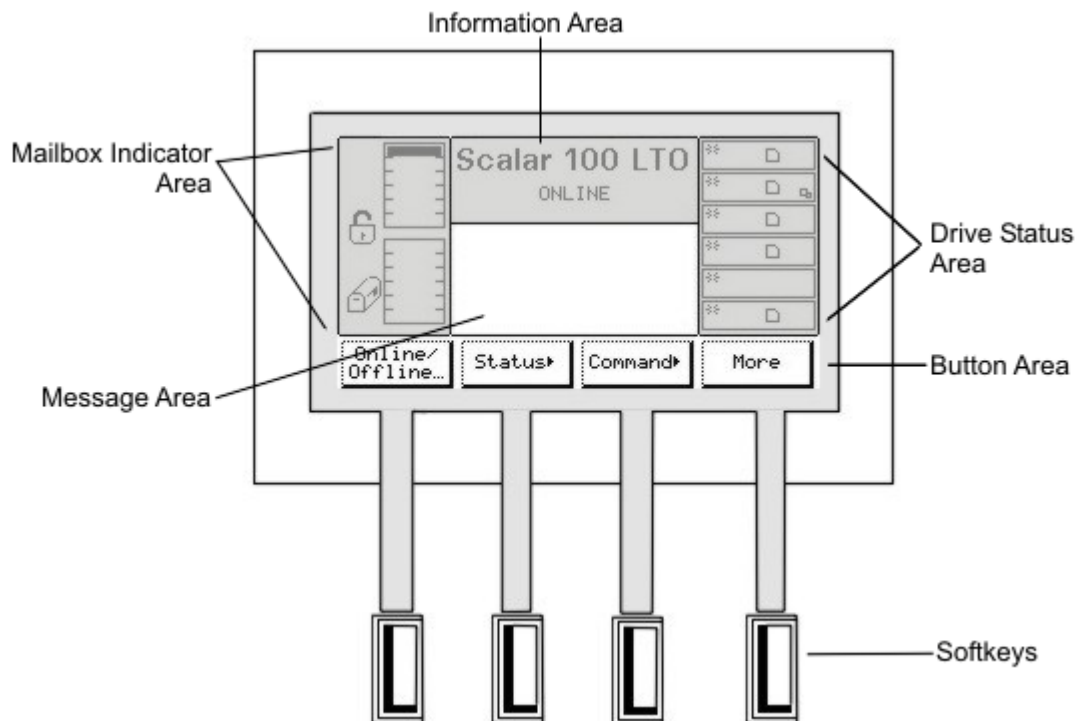
- mailbox indicator area
- information area
- drive status area
- message area
- button area



NOTE:

In the following graphic, shaded areas are for reference only. Your screen may differ depending on the configuration and type of media installed in your library. For example, the Operator Panel below displays an LTO library with a bulk load Mailbox.

Figure 5-1 Operator Panel Areas



Getting General Library Information

The information area provides general library information:

- Library name
- Media type (Although the media type is displayed, the drive type is not. For example, DLT is displayed for SDLT 320 libraries.)
- ONLINE/OFFLINE status
- Status or Attention Messages
- Current day of the week, date (month/day/year), and time

Getting Drive Status Information

The drive status area provides constant drive status. [Table 5-1 on page 5-35](#) provides an illustration and description of the icons associated with the drive status area.

Table 5-1 Drive Status Area Indications

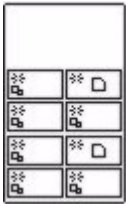

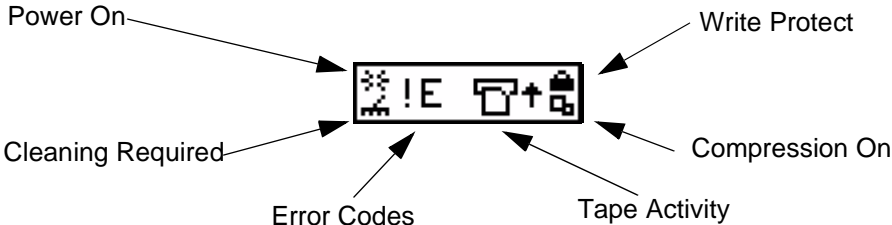
Indicator	Description
	Represents AIT drive modules.
	Represents DLT, LTO, and SDLT drive modules.
	
Drive Present	If a tape drive is present (in the drive module), the drive area is outlined.

Table 5-1 Drive Status Area Indications










Indicator	Description	
Power On	If the tape drive is turned on, the Power On indication is displayed.	
Cleaning Required	If the tape drive cleaning is required, the Cleaning Required indication is displayed.	
Error Code (LTO drives only)	If a drive error condition exists, an Error Code indication is displayed. All errors are preceded by the character "!" followed by the drive error code. "!"... indicates drive failures detected by the library and the drive is not capable of reporting the error.	
	!0	No Error. This code is displayed when power is cycled on the drive or when diagnostics have finished running and no error occurred.
	!1	A cooling problem has occurred.
	!2	A power problem has occurred.
	!3	A firmware problem has occurred. The drive determined that a firmware error occurred.
	!4*	A firmware or drive problem has occurred.
	!5*	A drive problem has occurred. The drive determined that a drive hardware failure occurred. To prevent damage to the drive, the drive may not allow you to insert a cartridge until the drive is powered off, then on.
	!6*	A drive problem has occurred. The drive determined that an error occurred, but could not isolate the error to faulty hardware or data cartridge.
	!7*	A media error has occurred. The drive determined that an error occurred because of a faulty tape cartridge.
	!8*	A drive SCSI bus error has occurred. The drive determined that a failure occurred in the drive hardware or in the SCSI bus.
	!9	A drive or RS-422 error has occurred. The drive determined that a failure occurred in the drive hardware or in the RS-422 connection.
	!C	Drive cleaning is required.
Compression On	If the tape drive is compressing data on tape, the Compression On indicator is displayed.	
Write Protect	If the tape is write protected, the Write Protect indicator is displayed.	
Tape Activity		A tape drive is loading a cartridge.

Table 5-1 Drive Status Area Indications

Indicator	Description	
		A tape drive has a cartridge loaded.
		A tape drive is rewinding a cartridge.
		A tape drive is unloading a cartridge.
		A tape drive has unloaded a cartridge.
		A tape drive is reading data from a cartridge.
		A tape drive is writing data to a cartridge.
		A tape drive is erasing data from a cartridge.
		A tape drive is locating data on a cartridge.

*Please call ATAC for assistance in interpreting these errors as they may be caused by erroneous signals from the drive.

Working with Buttons

The button area is a dynamic area of the Operator Panel. Depending on the menu, the buttons available here will change. To make a selection, press the appropriate soft key below that button in the button area.

Getting Library Messages

The message area of the Operator Panel displays six lines of text, graphic representations, or a combination of both to show interactive dialogs, special messages, alerts, and library configurations.

If an error or operator intervention message occurs, refer to [Troubleshooting and Help on page 12-87](#).

Getting Mailbox Status

The mailbox indicator area provides constant status on the library Mailbox. The icons displayed in the mailbox indicator area and their meanings are described in [Table 5-1 on page 5-35](#).

Table 5-1 Mailbox Indicator Area Icons










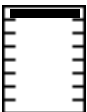


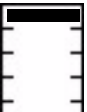





Media Type	Indicator	Description
All		This indicator is displayed if the host has issued a PREVENT/ALLOW MEDIUM REMOVAL SCSI command and locked the Mailbox.
All	 	<p>This indicator is displayed if the Mailbox is locked. The Mailbox can be locked by either of the following conditions.</p> <ul style="list-style-type: none"> • The host issues a PREVENT/ALLOW MEDIUM REMOVAL SCSI command and locks the Mailbox • The Scalar 100 is accessing a mailbox slot. • The Mailbox has been configured as all storage. <p>This indicator is displayed if the Mailbox is unlocked.</p>
All	     	<p>These indicators are displayed on screen for the six mailbox states.</p> <ul style="list-style-type: none"> • State 1: The mailbox door is closed. Any cartridge in the Mailbox has been inventoried. • State 2: The mailbox door is partially open. Any cartridge in the Mailbox has previously been inventoried. • State 3: The mailbox door is fully opened. Any cartridge in the Mailbox has previously been inventoried. You can now insert a cartridge to be imported. • State 4: The mailbox door is closed. A cartridge has been exported and has not been removed. • State 5: The mailbox door is partially open. A cartridge has been exported and has not been removed. • State 6: The mailbox door is fully open. A cartridge has been exported and has not been removed. While in this state, you can remove an exported cartridge.

Table 5-1 Mailbox Indicator Area Icons

Media Type	Indicator	Description
AIT	  	<p>These indicators are displayed on screen for all types of front door panel storage.</p> <ul style="list-style-type: none"> • Type 1: A mailbox indicator showing a cartridge indicated by the black slot. A total of 16 slots are available with 8 slots in each magazine. • Type 2: A two slot mailbox indicator. • Type 3: A continuous storage indicator. A total of 8 slots per magazine are available.
DLT/SDLT	  	<p>These indicators are displayed on screen for all types of front door panel storage.</p> <ul style="list-style-type: none"> • Type 1: A mailbox indicator showing a cartridge indicated by the black slot. A total of 10 slots are available. • Type 2: A single slot mailbox indicator. • Type 3: A continuous storage indicator. A total of 10 slots are available.
LTO	  	<p>These indicators are displayed on screen for all types of front door panel storage.</p> <ul style="list-style-type: none"> • Type 1: A mailbox indicator showing a cartridge indicated by the black slot. A total of 12 slots are available with six slots in each magazine. • Type 2: A single slot mailbox indicator. • Type 3: A continuous storage indicator. A total of 12 slots are available with six slots in each magazine.

Menu Guidelines

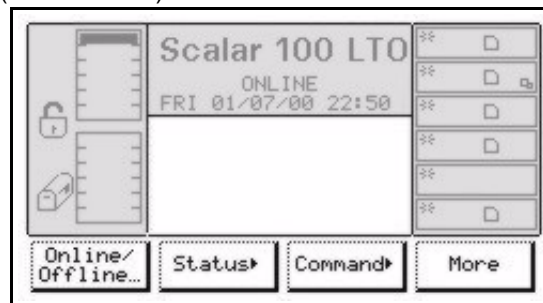
All menus and resulting options are grouped according to function. Some options are followed by special characters. The special characters include:

- A keyword leading to another menu is followed by a small black arrow. Example: ►
- A keyword leading to a dialog box is followed by three closely spaced dots.
- A keyword leading to an immediate action has no special character.
- Most fields on the menus, submenus, dialogs, and screens are read only. Those fields that are read/write are shown in white type over a black background. For example, during Export operations, cartridge selection is indicated as **ON**

Using the Main menu

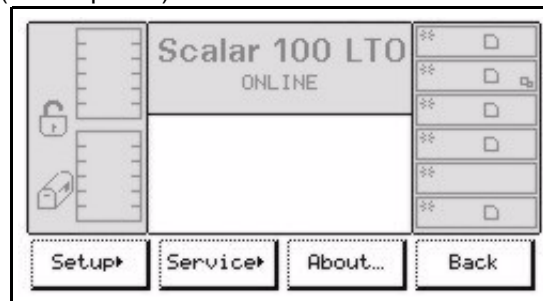
The Main menu is the first interactive menu displayed after you turn on the library. From this menu you can run all commands. Throughout this manual, all procedures begin from this menu.

Figure 5-2 Main menu (initial screen)



Pressing **More** displays additional options. **Back** returns you to the initial screen.

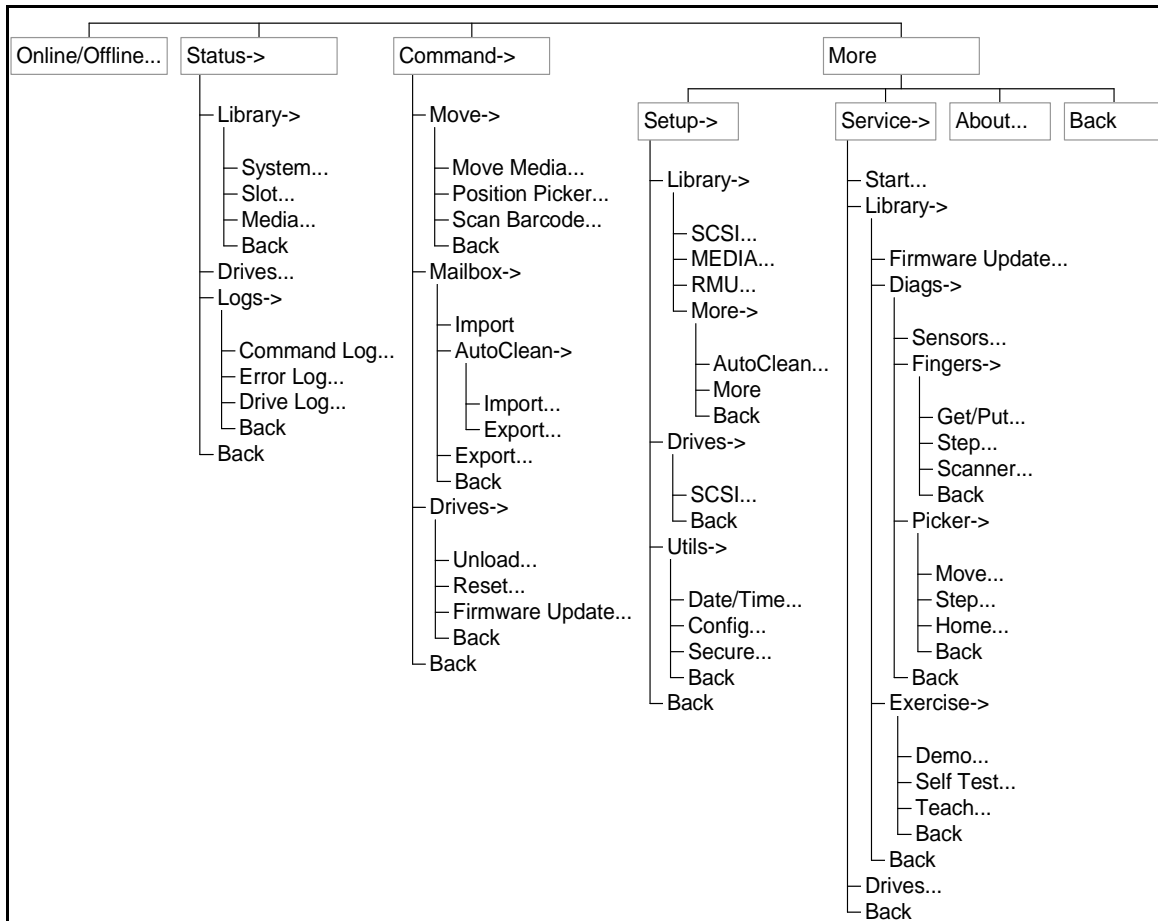
Figure 5-3 Main menu (more options)



The Menu Tree

The Operator Panel menu tree is displayed in [Figure 5-4 on page 5-38](#).

Figure 5-4 Operator Panel Menu Tree



Using Commands that Require an Offline State

The options available from the **Command** and **Service** menu require that the library be offline. If you attempt these commands while the library is online, you are prompted to take the library into an offline state. Alternatively, you can put the library into an offline state before you begin, by following the procedure below.

You should also put your library into an Offline state before turning off the library.

To place your library offline

1. From the Main menu, select **Online/Offline**.
2. Select **OK**.

The information area displays the offline status.

Getting Information

When working with your library, you will often need information about your library such as how many slots are filled or what firmware levels are currently running. Most of this information is available through the **Library** and **About** menus.

Viewing Library Information

Most of the library information is obtained through the **Library** menu. From the **Library** menu, you can check overall library information, information on a specific slot, and information on a specific tape cartridge.

However, you can also get information through the **About** menu, such as the serial number and the firmware levels.

Getting Library Statistics

Use **System** to get statistical information about your library, such as how many slots are full and how many lifetime moves have occurred.

A complete list of the information available through this command is shown in [Table 6-1 on page 6-39](#).

Table 6-1 Available Library Information

Field	Value ^a	Description
Storage Slots	Full: 0 to 96	The number of full slots.
	Full: 0 to 96	The number of empty slots.
Mailbox Slots	Full: 0 to 16	The number of filled mailbox slots.
	Empty: 0 to 16	The number of empty mailbox slots.
Drives	Full: 0 to 8	The number of filled drive slots.
	Empty: 0 to 8	The number of empty drive slots.
Moves	0 to 4,294,967,295	The lifetime number of slot to slot moves.
IO accesses	0 to 65535	The lifetime number of mailbox door openings.
Get retries	0 to 65535	The lifetime number of recovery retries on a get command.
Put retries	0 to 65535	The lifetime number of recovery retries on a put command.
Scan retries	0 to 65535	The lifetime number of recovery retries on scans.

a. The storage slot, mailbox slot, and drive maximum value may be different for your library, depending on your configuration and your drive type.

Path: **Main menu > Status > Library > System**

To get general library information

- From the Main menu, select **Status** and then select **Library**. Select **System**.

The library information is displayed. See [Table 6-1 on page 6-39](#) for information on each of these fields.

Getting Firmware and Serial Number Information

Use **About** to display the library serial number and the application and boot firmware levels. This includes the library, picker, display, drive, and RMU.

Path: **Main menu > More > About > (Details)**

To get overall library information

1. From the Main menu, select **More**. Select **About**.

The library serial number and library firmware level is displayed.

2. Select **Details**.

The library, picker, and display application and boot codes are displayed.

3. Continue selecting **Details** to scroll through the available information:

- **MainAppl** — the library application code.
- **PickAppl** — the picker application code.
- **DispAppl** — the display application code.
- **MainBoot** — the library boot code.
- **PickBoot** — the picker boot code.
- **DispBoot** — the display boot code.
- **Sled<x>Appl** — the drive module application code, where X is the drive module number.
- **Sled<x>Boot** — the drive module boot code, where X is the drive module number.
- **RMU Appl** — the Remote Management Unit (RMU) application code.

Getting Sensor Information

Use **Sensors** to view library sensor status. This option displays the real time status of the sensors in the library.

Path: **Main menu > More > Service > Library > Diags > Sensors**

To view sensor information

- From the Main menu, select **Service** and then select **Library**. Select **Diags** and then **Sensors**.

The Sensors dialog is displayed, with the following information:



NOTE:

For information on using **Lock/Unlock** to lock or unlock the Mailbox, see [Locking/Unlocking the Mailbox on page 8-63](#).

Field	Value	Description
PwrFan	0	The power supply fan is not running.
PwrFan	1	The power supply fan is running.
PwrSply	0	Additional power supply is not installed.
PwrSply	1	Additional power supply is installed.
DrvRmvd	0	Drive has not been removed.
DrvRmvd	1	Drive has been removed.
GrpThrm	0	Gripper thermometer not installed.
GrpThrm	1	Gripper thermometer installed.
GrpClsd	0	Gripper is open.
GrpClsd	1	Gripper is closed.
IE Lock	0	Mailbox is unlocked.
IE Lock	1	Mailbox is locked.
IE Open	0	Mailbox is closed.
IE Open	1	Mailbox is open.
IE Closed	0	Mailbox is open.
IE Closed	1	Mailbox is closed.
DoorOpn	0	Front door is closed.
DoorOpn	1	Front door is open.

Getting Slot Information

Use **Slot** to get statistical characteristics of a slot. The information available through this command is shown in [Table 6-2 on page 6-42](#).



NOTE: For more information on slot numbering, see [Slot Numbering on page 2-8](#).

Path: **Main menu > Status > Library > Slot**

Table 6-2 Available Slot Information

Field	Value	Description
Slot	1 to 5	Indicates the location of the tape cartridge column.
	A to C	Indicates the location of the tape cartridge magazine.
	1 to 8	Indicates the location of the tape cartridge row. The maximum value depends on your configuration.
Status	Empty	A tape cartridge is not present.
	Full	A tape cartridge is present.
Volser	0 to 9, A to Z	Indicates the barcode number.
Source	Column/Magazine/Slot	Indicates the home position of the tape cartridge.
Valid	Yes	The slot can be used.
	No	The slot cannot be used.
Total Puts	0000000 to 9999999	Indicates the total number of put operations.
Put Retries	0000000 to 9999999	Indicates the number of put retry operations.
Get Retries	0000000 to 9999999	Indicates the number of get retry operations.
Reserved	Yes	Indicates the slot is reserved by a SCSI host.
	No	Indicates the slot is not reserved by a SCSI host.
Reserve ID	00 to 96	Indicates the reserve ID.
Reserved by		Indicates the ID of the reserving host.
X-POS GET	00000000 to 99999999	Indicates the rotary position the picker uses to retrieve a tape cartridge from the selected slot.

Field	Value	Description
Y-POS GET	00000000 to 99999999	Indicates the vertical position the picker uses to retrieve a tape cartridge from the selected slot.
Z-POS GET	00000000 to 99999999	Indicates the horizontal position the picker uses to retrieve a tape cartridge from the selected slot.
X-POS PUT	00000000 to 99999999	Indicates the rotary position the picker uses to insert a tape cartridge into the selected slot.
Y-POS PUT	00000000 to 99999999	Indicates the vertical position the picker uses to insert a tape cartridge into the selected slot.
Z-POS PUT	00000000 to 99999999	Indicates the horizontal position the picker uses to insert a tape cartridge into the selected slot.

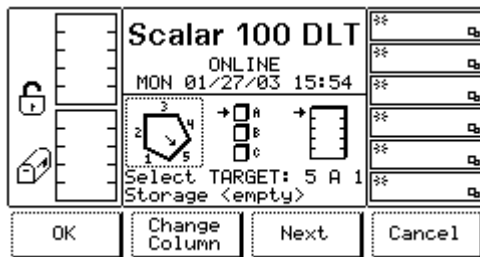
To get slot information

1. From the Main menu, select **Status** and then select **Library**. Select **Slot**.

The **Slot** dialog is displayed.

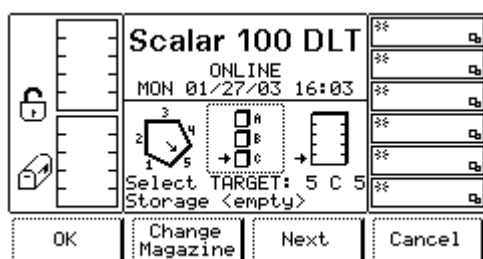
2. With **Select Column** selected, press **Change Column** until the arrow points to the column that contains the target slot. Press **Next**.

If you select the drive column, no slot or magazine parameters are available. The menu will revert from the drive parameter back to the change column parameter.



3. With **Magazine** selected, select **Change Magazine** until the arrow points to the target magazine. Press **Next**.
4. With **Slot** selected, press **Change Slot** until the arrow points to the target slot.

The **Select TARGET** line displays the target slot. For example, the display below has slot 5C5 selected as the target.



5. When the correct slot is selected, select **OK**.
The slot information is displayed.
6. Press **Next** to scroll through the available information.

Getting Tape Cartridge Information

Use **Media** to get information about the tape cartridges in the library. You can select the tape cartridge using the volser number and the current physical location of the tape cartridge. The information available through this command is shown in [Table 6-2 on page 6-42](#).



NOTE: For more information on slot numbering, see [Slot Numbering on page 2-8](#).

Path: **Main menu > Status > Library > Media**

Table 6-3 Available Media Information

Field	Value	Description
Volser	0 to 9, A to Z	Indicates the barcode number.
Column	1 to 5	Indicates the location of the tape cartridge column.
Section	A to C	Indicates the location of the tape cartridge magazine.
Row	1 to 8	Indicates the location of the tape cartridge slot.
Cell	0 to 105	Indicates the location of the tape cartridge cell. Starting from the top location in the Mailbox, counting down continuously to each section.

To get media information

1. From the Main menu, select **Status** and then select **Library**. Select **Media**.

The **Media** dialog displays. The dialog displays the media cartridges currently in the library by their barcode and current location (column/magazine/row).

2. Press **Select** and then use the **Up** and **Down** buttons to select the media cartridge.
3. Press **Select**.

The selected media cartridge's information is displayed.

Viewing Drive Information

Use **Drives** to get information about a drive. The information available through this command is shown in [Table 6-4 on page 6-45](#).

Path: **Main menu > Status > Drives**

Table 6-4 Available Drive Information

Field	Value	Description
Drive	01 to 08	The number of the drive currently selected.
Type	AIT, AIT3, LTO, IBM LTO2, DLT, DLT 8000, SDLT, SDLT320	The type of drive currently selected.
Ser Num	A to Z, 0 to 9	The serial number of the drive currently selected.
Version	A to Z, 0 to 9	The current level of firmware installed on the drive displayed.
SCSI ID	00 to 15	The SCSI ID of the currently selected drive.

To get drive information

1. From the Main menu, select **Status** and then select **Drives**.

The **Drive** information is displayed.

2. To view a different drive, select **Change Drive**.

The new target drive's information is automatically displayed.

Getting Logs

Logs provides access to the available logs, which include the Command, Error, and Drive logs. You can view the logs on the Operator Panel or print by sending the log to a serial port.

These logs are also available through the Remote Management Unit.

Printing Logs (HyperTerminal)

When working with logs, you have the option to send the log to a serial port. This option is usually indicated as **Print** in the Operator Panel. To send a log, you must have HyperTerminal running when you select **Print**.



NOTE:

These logs are also available as Diagnostic Files through the Remote Management Unit (RMU). If the RMU is used, you do not need a serial connection.

To set up HyperTerminal

1. Connect a straight through serial cable from the host to the serial port located on the Library Controller. (A null modem cable will not work in this procedure.)
2. Start HyperTerminal and configure it with the following parameters:
 - Bits per second: 38400
 - Data bits: 8
 - Parity: None
 - Stop bits: 1
 - Flow control: None
 - Emulation: ANSI



NOTE:

Refer to the HyperTerminal documentation for information on how to configure and run HyperTerminal.

Getting the Command Logs

The Command log is a history of all library operations. A maximum of 50 library operations are stored. You can print the log by sending it to the serial port.

Path: **Main menu > Status > Logs > Command Log**

To get the Command log

1. From the Main menu, select **Status** and then select **Logs**. Select **Command Log**.

The most recent command displays first. Note that the explanation may be useful only when you contact ATAC.
2. Use **Next** or **Previous** to scroll through the stored commands.
3. If you want to send the entire log to a serial port, start HyperTerminal (see [Printing Logs \(HyperTerminal\) on page 6-46](#)). Select **Print** and then select **OK**.

Getting Error Logs

The Error log is a history of error conditions that have occurred. A maximum of 213 errors are kept in the log. You can print the log by sending it to the serial port.

Path: **Main menu > Status > Logs > Error Log**

To get the Error log

1. From the Main menu, select **Status** and then select **Logs**. Select **Error Log**.

The most recent error displays first. The following information is provided:

- Date (Month/Day/Year) — The date of the error.
 - Time (Hrs:Mins:Secs) — The time of the error.
 - Type (text) — Useful only to ATAC.
 - Error (Hexadecimal number) — Useful only to ATAC.
 - Modifier (Hexidecimal number) — Useful only to ATAC.
 - Board (any PCBA) — The PCBA associated with the error.
2. Use **Next** or **Previous** to scroll through the errors.
 3. If you want to send the entire log to a serial port, start HyperTerminal (see [Printing Logs \(HyperTerminal\) on page 6-46](#)). Select **Print** and then select **OK**.

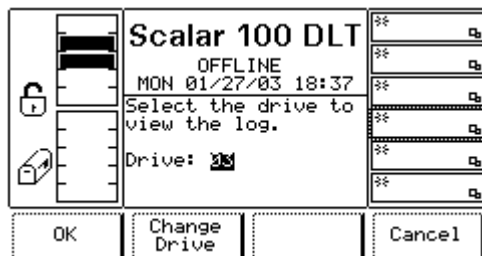
Getting Drive Logs

The Drive log is a history of drive error conditions that have occurred. You can print the log by sending it to the serial port.

Path: **Main menu > Status > Logs > Drive Log**

To get the Drive log

1. From the Main menu, select **Status** and then select **Logs**. Select **Drive Log**.
2. Using **Change Drive**, select the drive whose log you want to view.



3. Select **OK**.

The Drive log contains:

- Num (0 to 9) — Error ID
- Error (0 to 9) — Error Type

- FSCI (0000 to 9999) — Fault symptom code 1
 - FSC2 (0000 to 9999) — Fault symptom code 2
4. Use **Next** and **Previous** to scroll through the drive errors.
5. If you want to clear the log, send the log to HyperTerminal, or copy the log to a tape cartridge in the library, select **Options**.
- To clear the log, select **Clear Log**. Select **OK**.
 - To send the log to HyperTerminal, select **Force Dump**. Start HyperTerminal (see [Printing Logs \(HyperTerminal\) on page 6-46](#)). Select **OK**.
 - To send the log to a tape cartridge, do the following:
 - a. Select **Copy Dump**.
 - b. Put a scratch cartridge in slot 1A1.
 - c. After the TEACH and INVENTORY, select **OK**.
 - d. The tape is placed into a drive, and the log is copied to the tape cartridge. When done, the tape is placed back into slot 1A1. Select **OK**.

Running your Library

For everyday tasks, the **Command** menu is the most frequently used menu. Most actions associated with this menu are related to physical movement in the library. For example, importing tape cartridges or moving a tape cartridge to a specific slot are considered everyday tasks. These commands all require the library to be in an offline state.

Turning on the Library

To turn on the library

1. If you have not unlocked the front door and cleared the area of packaging materials, do so now. (See [Unpacking your Library on page 3-12](#)).
2. Turn on the rear power switch and then turn on the front power switch. The library firmware will automatically begin the teach and inventory processes.
3. Turn on your host computer and verify SCSI communication. (See [Verifying Communication with the Host on page 3-15](#).)
4. Once the inventory and teach process is complete, we recommend you run Demo for at least five cycles. To do this, place the library in an offline state, and then chose **Main menu > Service > Library > Exercise > Demo**.

Turning off the Library

The library can be shut down normally or by the Emergency Shutdown method. Except in emergencies, stop the library with the normal shutdown procedure before switching off the rear power switch. ADIC is not responsible for damage caused by improper use of the rear power switch. All risk lies entirely with the user.

**CAUTION:**

In emergency situations, immediately switch off the rear power switch. This removes all power from the library.

To shutdown the library

1. If the library is in an ONLINE state, from the Main menu, select **Online/Offline**.
2. Press **OK**. Visually confirm that the library has changed to the OFFLINE state.
3. Turn off the front power switch.
4. Turn off the rear power switch.

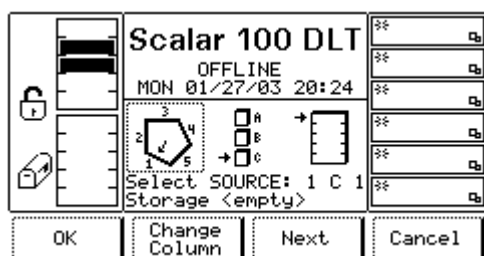
Moving Tape Cartridges

Use **Move Media** to move tape cartridges between slots. This is useful for instances where you want to group a series of cartridges in the library.

Path: **Main menu > Command > Move > Move Media**

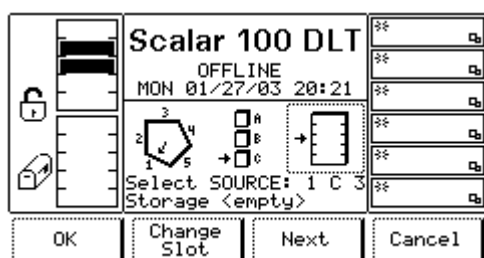
To move tape cartridges

1. From the Main menu, select **Command** and then select **Move**. Select **Move Media**.
2. With **Select Column** selected, press **Change Column** until the arrow points to the source column. Press **Next**.



3. With **Magazine** selected, select **Change Magazine** until the arrow points to the source magazine. Press **Next**.
4. With **Slot** selected, press **Change Slot** until the arrow points to the source slot.

The **Select SOURCE** line displays the source slot. For example, the display below has slot 1C3 selected as the source slot.



5. When the correct slot is selected, select **OK**.
6. Select the target slot by repeating the same process.
7. Press **OK**.

The tape cartridge is moved.

Moving the Picker

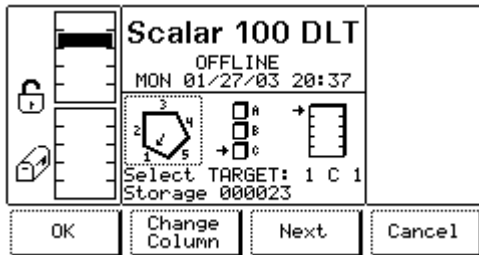
When working with your library, you may want to move the picker to specific location in the library so that you can have an unobstructed view an area or so that you can gain access to a particular spot in the library. To move the picker to a specific location, use **Move Picker**.

Path: **Main menu > Command > Move > Position Picker**

To move the picker

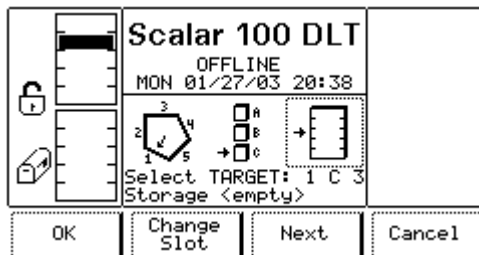
1. From the Main menu, select **Command** and then select **Move**. Select **Position Picker**.

- With **Select Column** selected, press **Change Column** until the arrow points to the target column. Press **Next**.



- With **Magazine** selected, select **Change Magazine** until the arrow points to the target magazine. Press **Next**.
- With **Slot Parameter** active, press **Change Slot** until the arrow points to the target slot.

The **Select TARGET** line displays the target location. For example, the display below has slot 1C3 selected as the target.



- When the correct location is selected, select **OK**.

The picker is moved to the specified location.

Taking Inventory

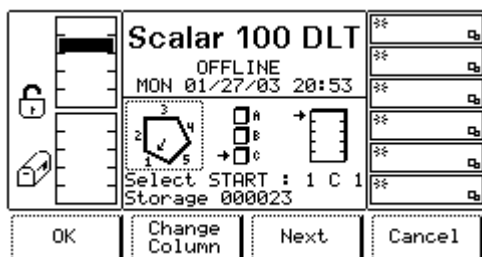
Periodically, you may need to take inventory of the tape cartridges in the library outside of the initial TEACH and INVENTORY that occurs at startup or when the door or Mailbox are opened. For example, if there is a discrepancy between the number and location of tape cartridges in the library, you may want to take inventory to reestablish these values. **Scan Barcode** allows you to take inventory of the entire library or a specific set of tape cartridges.

Path: **Main menu > Command > Move > Scan Barcode**

To scan a range of tape cartridges

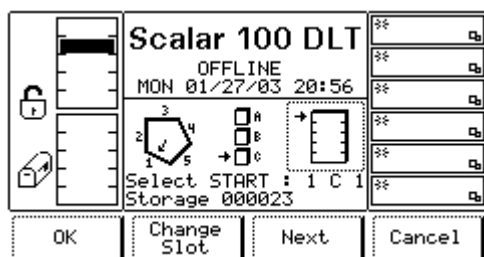
- From the Main menu, select **Command** and then select **Move**. Select **Scan Barcode**.

2. With **Select Column** selected, press **Change Column** until the arrow points to the start column. Press **Next**.



3. With **Magazine** selected, select **Change Magazine** until the arrow points to the start magazine. Press **Next**.
4. With **Slot** selected, press **Change Slot** until the arrow points to the start slot.

The **Select START** line displays the start location. For example, the display below has slot 1C1 selected as the start location.



5. When the start location is specified, select **OK**.
6. Enter the number of slots to scan, using **Up** and **Down**. Press **Next**.
7. Specify whether to display the scan results using **Yes/No**.
8. Press **OK**.

Adding/Removing Tape Cartridges

You can add or remove tape cartridges from your library through the Mailbox or by manually performing the task. Adding and removing through the Mailbox is the preferred method as it does not interrupt library operations.



CAUTION:

Do not use these procedures to insert or remove cleaning cartridges into the library. See [Working with Cleaning Cartridges on page 7-54](#).

Importing Tape Cartridges

Use **Import** to add tape cartridges to your library through the Mailbox. **Import** moves all tape cartridges currently in the Mailbox to the first available slots in the library. Using **Import** to insert tape cartridges does not disrupt library operations.

To use this procedure, the Mailbox must be unlocked. For more information, see [Locking/Unlocking the Mailbox on page 8-63](#). In addition, before beginning, ensure the tape cartridges have barcode labels and are not write-protected.

**CAUTION:**

If the library is partitioned (through the host software), this command could move a tape cartridge into an incorrect partition. After importing, notice where the tape cartridge is placed, and if necessary, move the tape cartridge to a new location using **Move Media**.

Path: **Main menu > Command > Mailbox > Import**

To import tape cartridges

1. From the Main menu, select **Command** and then select **Mailbox**. Select **Import**.

The picker moves all cartridges in the Mailbox to the first available empty slots. See [Slot Numbering on page 2-8](#).

2. When complete, select **OK**.
3. If you want to move the imported tape cartridges to a new location, use **Move Media**.

Manually Inserting Tape Cartridges

If you need to add a large number of tape cartridges to the library, you probably will want to manually insert them. If you only have a small number of tape cartridges to add, use the **Import** command as it does not interfere with library operations. To do this procedure, the front door must be unlocked or you must have the key. In addition, before starting, ensure the tape cartridges have barcode labels and are not write-protected.

**CAUTION:**

If your library is partitioned (through the host software), be aware of where you are placing tape cartridges.

To manually insert tape cartridges

1. Place the library in an offline state.
See [Using Commands that Require an Offline State on page 5-38](#).
2. If the library door is locked, unlock the door. Open the door, and put the tape cartridges into the slots.
3. Close the door. (Lock it if necessary.)

The library executes the **TEACH** and **INVENTORY** procedures.

Exporting a Tape Cartridge

Use **Export** to remove tape cartridges from your library through the Mailbox. **Export** takes a specific tape cartridge and places it in the Mailbox so that you can remove it from your library. To use this procedure, the Mailbox cannot be configured as storage.

Path: **Main menu > Command > Mailbox > Export**

To export tape cartridges

1. From the Main menu, select **Command** and then select **Mailbox**. Select **Export**.
2. Select **OK**.

The panel shows a list of tape cartridges in the library.

3. Press **Select** to begin choosing the tape cartridge(s) you want to export.
4. Use **Next**, **Select**, and **Pages** to choose the tape cartridge(s) you want to export.
Highlighted cartridges will be exported. You can only export as many tape cartridges as your Mailbox holds.
5. When complete, press **OK**.

Manually Removing Tape Cartridges

If you need to remove a large number of tape cartridges, you probably will want to manually remove them. If you only have a small number of tape cartridges to remove, use the **Export** command as it does not interfere with library operations. To do this procedure, the front door must be unlocked or you must have the key.

To manually remove tape cartridges

1. Place the library in an offline state.
See [Using Commands that Require an Offline State on page 5-38](#).
2. If the library door is locked, unlock the door. Open the door, and remove the tape cartridges.
3. Close the door. (Lock it if necessary.)

The library executes the TEACH and INVENTORY procedures.

Working with Cleaning Cartridges

The **AutoClean** menu allows you to import and export cleaning cartridges. It also provides you access to cleaning cartridge information.

For information about how cleaning drives, see [Configuring Drive Cleaning on page 8-60](#).

Viewing Cleaning Cartridge Status

Use **AutoClean** to get information about the cleaning cartridges in your library, including how many cleaning cartridges are in the library, the number of times a cleaning cartridge has been used, the number of times a cleaning cartridge can be used, and whether AutoClean is active or inactive.

Path: **Main menu > Command > Mailbox > AutoClean**

To get cleaning cartridge information

1. From the Main menu, select **Command** and then select **Mailbox**. Select **AutoClean**.

The **AutoClean** dialog displays with the following information:

- If the slot is darkened, it means the indicated cleaning slot is full.
- **UseCnt** (00 to 99 or EXP)—indicates the number of times the cleaning cartridge has been used. EXP means the cleaning cartridge is expired.
- **MaxCnt** (50 or EXP)—Indicates the number of time the cleaning cartridge can be used. EXP means the cleaning cartridge is expired.
- **Status** (Active)—Indicates the AutoClean feature is currently active.

Importing Cleaning Cartridges

Use this command to import cleaning cartridges. You can only import a cleaning cartridge if one of the fixed cleaning cartridge slots is available. If no slots are available, export an existing cleaning cartridge first. This command is only available if you have AutoClean configured.

A total of three cleaning cartridges can be imported. They are stored in fixed slots located at the top of columns 2, 4, and 5.

Path: **Main menu > Command > Mailbox > AutoClean > Import**

To import cleaning cartridges

1. From the Main menu, select **Command** and then select **Mailbox**. Select **AutoClean**.
2. Select **Import**.
3. Open the Mailbox and put a cleaning cartridge into the top slot of the Mailbox.



NOTE: Only the top slot of the mailbox can be used to import cleaning cartridges.

4. Close the Mailbox.

The library executes the TEACH and INVENTORY commands.

5. Select **OK**.

The **Set Use and Max Count** dialog is displayed.

6. In the **Use-Count** field, use **Up** and **Next** to enter how many times the cleaning cartridge has been used.

Max-Count is a read-only field.

7. Select **OK**.
8. When the command is complete, press **OK**.

Exporting Cleaning Cartridges

Use this command to export cleaning cartridges. You can only export a cleaning cartridge if a Mailbox slot is available.

Path: **Main menu > Command > Mailbox > AutoClean > Export**

To import cleaning cartridges

1. From the Main menu, select **Command** and then select **Mailbox**. Select **AutoClean**.
2. Select **Export**.
3. Use **Up** and **Down** to select the desired cleaning cartridge.
4. Press **Select**.
5. When the command is complete, press **OK**.

Working with Drives

You can unload a drive, reset a drive, or update the drive firmware. Unloading a drive is addressed here. See [Maintaining your Library on page 9-65](#) for information on resetting drives and updating drive firmware. For information on cleaning drives, see [Configuring Drive Cleaning on page 8-60](#).

Unloading a Drive

Use this feature to unload a tape cartridge from a specific drive. The tape cartridge will be placed in its original slot.

Path: **Main menu > Command > Drives > Unload**

To unload a tape cartridge from a specific drive

1. From the Main menu, select **Command** and then select **Drives**. Select **Unload**.
2. Select **Change Drive** to specify the drive to be unloaded.



3. Select **OK**.

Configuring your Library

You can configure your library in many different ways. Configuring includes setting the library SCSI ID, setting the number of retries your library will attempt, and setting whether your Mailbox is to be used for import/export functions or for storage. These operations are those that personalize the library to your environment.

Configuring General Characteristics

The general characteristics of the library are configured using **SCSI** and **Config**. The following sections describe how to use these commands.

Configuring Library Characteristics

Use **SCSI** to configure the general characteristics of your library. This includes the following items:

- Setting the SCSI ID of the library — Remember that it is important that each ID be unique from other SCSI devices on the SCSI bus.
- Setting the number of retries — This the number of times the library will attempt to put or get a media cartridge before it gives an error.
- Enabling or disabling Parity — This value defaults to enabled and must match the configuration of the host bus adapter.
- Emulating a different library — You can configure your library to emulate other ADIC products. This is useful if your host software recognizes other ADIC products, but not the Scalar 100 (this may happen if, for example, you do not have the correct drivers installed). This feature allows the Scalar 100 to appear like a different library so that the host knows how to communicate with it.



NOTE:











Many other library characteristics are set using **Config**. For more information, see [Configuring General Characteristics on page 8-57](#).

Path: **Main menu > More > Setup > Library > SCSI**











To configure the library

1. From the Main menu, select **More**. Select **Setup** and then select **Library**. Select **SCSI**.
The current and new values display.
2. Use **Up**, **Down**, **Next**, and **Yes/No** to enter values in the following fields:
 - **SCSI ID** — Sets the SCSI ID of the library. Available SCSI IDs are 0 to 7.
 - **Retries** — Sets the number of retries. Possible values are 0 to 255.
 - **Parity** — Enables or Disables parity. Possible values are **Yes** and **No**.
 - **Library sign-on** — Changes the library sign-on. Possible values are **Scalar 100**, **Scalar DLT 448**, **Scalar 1000**, and **EXB-480**.

3. When finished, with **Parity** or **Library sign-on** selected, select **OK**.

 	Scalar 100 DLT		**	
	OFFLINE		**	
	TUE 01/28/03 21:03		**	
	CURRENT NEW		**	
	SCSI ID: 0	5	**	
	Retries: 001	005	**	
	Parity: Yes	Yes	**	
	Library sign-on:	Scalar 100	**	
OK		Yes/No	Next	Cancel

4. The new values will not take effect until you reboot the library. If you want to reboot now, select **OK**. If you want to wait, select **Cancel**.

 	Scalar 100 DLT		**	
	OFFLINE		**	
	TUE 01/28/03 21:07		**	
	The new values are set. They will take effect when the library is rebooted.		**	
	Do you want to reboot now?		**	
			**	
			**	
			**	
OK				Cancel

Configuring Additional Library Options

Use **Config** to configure additional library characteristics. These characteristics include:

- Choosing whether the Operator Panel LCD has a backlight.
- Choosing whether or not to enable key strokes when pressing library buttons.
- Setting whether the library scans all barcodes when the library is booted up. Note that the library must either scan or touch all media cartridges when booted.
- Setting whether the library touches all media cartridges when booted. Note that the library must either scan or touch all media cartridges when booted.
- Setting the Mailbox for import/export commands or as additional storage.

Path: **Main menu > More > Setup > Utils > Config**

To configure additional library options

1. From the Main menu, select **More**. Select **Setup** and then select **Utils**. Select **Config**.

The **Config** dialog displays.

Scalar 100 DLT		**
ONLINE		**
FRI 04/03/99 06:33		**
Backlight on :	Yes	**
Audio on :	No	**
Scan on Init :	No	**
Touch on Init:	Yes	**
Mailbox:	Impprt/Expprt	**
OK		Yes/No
Next		Cancel

2. Using **Yes/No**, **Next**, and **Change**, set the following fields:
 - **Backlight on** — Sets the backlight on or off. Possible values are **Yes** or **No**.
 - **Audio on** — Determines whether key stroke sounds are made when a button is pressed. Possible values are **Yes** and **No**.
 - **Scan on Init** — Indicates whether the library will scan all tape cartridge barcodes when the library is booted up. Note that either **Scan on Init** or **Touch on Init** must be enabled. Possible values are **Yes** or **No**.
 - **Touch on Init** — Indicates whether the library picker will touch all tape cartridges when the library is booted up. Note that either **Scan on Init** or **Touch on Init** must be enabled. Possible values are **Yes** or **No**.
 - **Mailbox** — Determines whether the Mailbox will be used to import and export tape cartridges or if the Mailbox will be used as storage slots.
 - **Impprt/Expprt** — Indicates the Mailbox is for importing or exporting tape cartridges.
 - **Storage** — Indicates the Mailbox is for storage.
3. Select **OK**.

Configuring Barcode Length

Use **Media** to configure the barcode length (volser) your library reads. By default, the library reads an extended barcode label, 5 to 13 characters. However, you can configure your library to read six character barcode labels.

For more information on barcode labels, see [Barcode Label Requirements on page 10-76](#).

Path: **Main menu > More > Setup > Library > Media**

To configure the barcode length

1. From the Main menu, select **More**. Select **Setup** and then select **Library**. Select **Media**.

2. Use **Change** to select one of the following:
 - **DEFAULT** — The library reads 6 character barcode labels.
 - **EXTENDED** — The library reads 5 to 13 character barcode labels.
3. Select **OK**.

Configuring Drive Cleaning

In most configurations, drive cleaning is controlled through the host; however, if desired, the library has an AutoClean feature that enables the library to control drive cleaning. (Host controlled drive cleaning is the default condition.)

Drive cleaning requires cleaning cartridges to be imported into the library. (Note that cleaning cartridges are imported differently than regular tape cartridges.) A total of three cleaning cartridges can be imported. These cartridges are stored in fixed slots located at the top of columns 2, 4, and 5. These slots are not counted as part of the slot capacity of the library, are not included in the report of storage elements, and are not addressable to SCSI hosts.



NOTE: A DLT cleaning tape cannot be used in an SDLT drive.

Working with AutoClean

AutoClean allows the library to clean a drive without instruction from a host.



NOTE: If the Mailbox is configured as storage, the AutoClean function cannot be enabled.

As AutoClean does not require host intervention, it should only be enabled if the host application does not or is not configured to control drive cleaning. The cleaning operation is transparent to the host application and will only occur when a drive requests to be cleaned. The host application will get a delayed response until the cleaning operation is complete.

AutoClean requires at least one cleaning cartridge and a communication interface to the drive with the ability of the drive to indicate that cleaning is needed. If AutoClean is enabled, the cleaning slots will be inventoried by touch.

Enabling/Disabling AutoClean

Use **AutoClean** to enable or disable the AutoClean feature. (Disabling AutoClean will stop all cleaning inquiries to the drive.) Be sure to import cleaning cartridges into your library before enabling AutoClean.

Path: **Main menu > More > Setup > Library > AutoClean**

To enable/disable autoclean

1. From the Main menu, select **More**. Select **Setup** and then select **Library**. Select **AutoClean**.

2. Select **Enable** or **Disable** to check or uncheck the box.

A checked box indicates AutoClean is enabled.

3. Select **OK**.

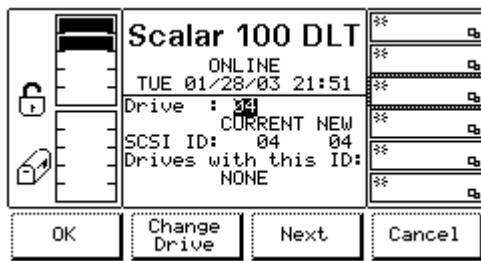
Setting Drive SCSI IDs

Use **Drive** to set drive SCSI IDs. The drive SCSI IDs must be different from other SCSI devices on the SCSI bus. Available SCSI IDs are 0 to 15.

Path: **Main menu > More > Setup > Drive > SCSI**

To set a drive SCSI ID

1. From the Main menu, select **More**. Select **Setup** and then select **Drive**. Select **SCSI**.
2. Use **Change Drive** to select the drive whose SCSI ID you want to set.



Drive	Current	New
04	04	04

Drives with this ID: NONE

OK Change Drive Next Cancel

3. Select **Next**.
4. Use **Up** and **Down** to pick the new SCSI ID for that drive.
The CURRENT column displays the current SCSI ID. The NEW column displays the new SCSI ID.
5. Select **Next**.
6. After the dialog refreshes, the **Drives with this ID** shows how many other drives use the selected SCSI ID. If it displays **NONE**, select **OK**. Otherwise, change the drive SCSI ID so that it is unique.

The library resets the SCSI IDs of the affected drives.

7. When complete, select **OK**.

Setting the Date and Time

Use **Date/Time** to set the library date and time used by the library logs and displayed on the Operator Panel.

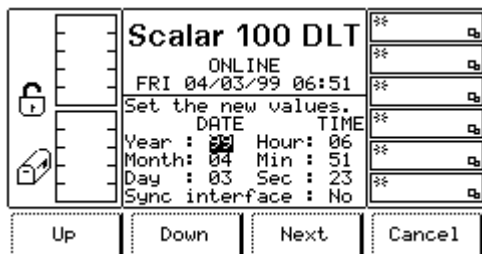
Note that this does not affect the date and time used by the Remote Management Unit (RMU), but does affect the date and time shown in the logs retrieved by the RMU.

Path: **Main menu > More > Setup > Utils > Date/Time**

To set the date and time

- From the Main menu, select **More**. Select **Setup** and then select **Utils**. Select **Date/Time**.

The **Date/Time** dialog displays.



Scalar 100 DLT		??
ONLINE		??
FRI 04/03/99 06:51		??
Set the new values.		??
DATE	TIME	??
Year : 03	Hour : 06	??
Month : 04	Min : 51	??
Day : 03	Sec : 23	??
Sync interface : No		??
Up	Down	Next
Cancel		

- Do one of the following:
 - Use **Up**, **Down**, and **Next** to set the values in the **DATE** and **TIME** columns. Note that the library uses a 24 hour clock:
 - Year**: The last two digits of the year.
 - Month**: The month number.
 - Day**: The day.
 - Hour**: The hour. Note that the library uses a 24-hour clock.
 - Min**: The number of minutes past the hour.
 - Sec**: The number of seconds.



NOTE: At this time, **Sync interface** is an unsupported feature.

- When finished, with **Sync interface** selected, press **OK**.

Password Protecting the Operator Panel

You can set a password to protect the Operator Panel. Use the following procedure to enable or disable the password and to set/change the password.

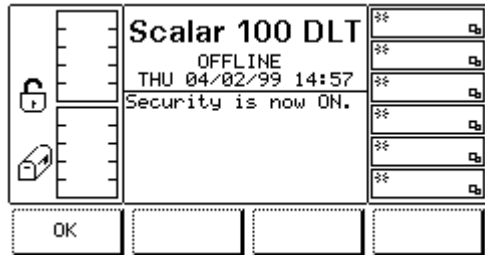
Path: **Main menu > More > Setup > Utils > Secure**

To enable/disable or change a password

- From the Main menu, select **More**. Select **Setup** and then select **Utils**. Select **Secure**.

2. Do one of the following:

- If you are enabling or disabling security:
 - a. Use **Yes/No** to indicate whether or not you want to enable a password. A checked box means that the password feature is enabled. Selecting **Yes/No** displays a confirmation screen, showing security as **ON** or **OFF**.



- b. Select **OK**.
- To set or change the password:
 - a. Press **Next** to select **Set/Change Password**. Press **Change**.
 - b. Use **Up** and **Next** to set your four-digit, numeric password. Values are 0 to 9.
 - c. A confirmation dialog displays. Select **OK**. On the Secure menu, select **OK** again.

Locking/Unlocking the Mailbox

Use **Sensors** to lock and unlock the Mailbox. This lock feature can be useful if you want to restrict access to the library. This command is often used with an Operator Panel password activated.

Path: **Main menu > More > Service > Library > Diags > Sensors**

To lock/unlock the Mailbox

1. From the Main menu, select **More**. Select **Service** and then select **Library**. Select **Diags** and then **Sensors**.

The sensor information is displayed. For information on this dialog, see [Getting Sensor Information on page 6-41](#).

2. Select **Lock/Unlock** to lock and unlock the Mailbox. When you are done, select **Cancel**.

Maintaining your Library

Actions such as exercising the picker, the barcode scanner, and the library itself are considered maintenance. These actions also include performing maintenance on drives and updating firmware.

Most of these actions are reserved for Support personnel.

Displaying SACs (Advanced vs Normal Service)

When administering the library, there are certain commands that are password protected and only available for Support personnel. These commands are available by selecting **ADVANCED** from the **Service** menu. If you choose **NORMAL**, the Service Action Codes (SACs) are displayed.

Path: **Main menu > More > Service > Library > Firmware Update**

To select **NORMAL** or **ADVANCED** service

1. From the Main menu, select **More**. Select **Service** and then select **Library**. Select **Firmware Update**.
2. Using **Normal/Advanced**, select **NORMAL** or **ADVANCED** service.
3. Select **OK**.
4. If you selected **NORMAL**, the SACs appear. If you selected **ADVANCED**, you are now ready to do advanced service to the library.

Updating Firmware

Periodically, you will need to update your library and drive firmware.

Preferred Methods

Although some of these procedures are documented here, typically the Operator Panel options to update firmware are for use by Support personnel. To update your library, drive, and/or RMU firmware, use the Remote Management Unit or the Firmware and Diagnostics Tool (available from www.adic.com).

- The RMU can update library, drive (LTO only), and RMU firmware.
- The Firmware and Diagnostics Tool can update library and drive (all types) firmware.

Updating Library Firmware

Firmware Update is used by Service personnel to update library firmware.

Path: **Main menu > More > Service > Library > Firmware Update**

Updating Drive Firmware

One way to update drive firmware is using the **Firmware Update** command. This method requires a Firmware Upgrade Tape (FUP tape). To get a FUP tape, contact ATAC. (If you have an LTO library, you may be able to create your own FUP tape, see [Creating or Erasing a FUP Tape on page 9-66](#).)

Alternatively, you can update firmware with the RMU or with the Firmware and Diagnostics Tool.

Path: **Main menu > Command > Drives > Firmware Update**

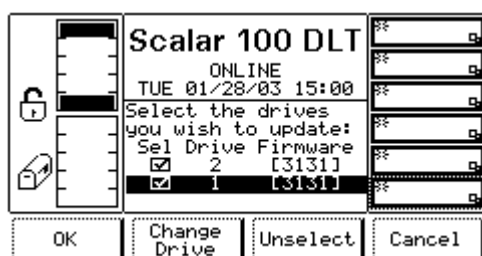
To update drive firmware with a FUP tape

1. From the Main menu, select **Command** and then select **Drives**. Select **Firmware Update**.
2. Place the FUP tape into slot A1A (the top mailbox slot). Select **OK**.

The library performs a TEACH and INVENTORY. The available drives and firmware levels for each drive are displayed.

3. Select the drive(s) you want to update using **Change Drive** and **Unselect**. (All drives are automatically selected, you must unselect the drives that you do not want to update).

Drives that will be updated are indicated with a checkmark.



4. Select **OK**.

The picker gets the FUP tape and puts it in the first selected drive. After that drive is updated, the picker places it into the next drive until all selected drives are updated. When complete, the picker puts the FUP tape back into slot 1A1.

5. When finished, select **OK**.

Creating or Erasing a FUP Tape

If you have an LTO library, you can create or erase Firmware Upgrade (FUP) tapes.

Path: **Main menu > More > Service > Drives > (select drive) > FMR Tape**

To create or erase a FUP tape

1. From the Main menu, select **More**. Select **Service** and then select **Drives**.
2. In the **Drive** field, specify the drive whose firmware you want to copy by selecting **Change Drive** until the desired drive is displayed.
3. Select **FMR Tape**.
4. Use **Change** to select **Create** or **Erase**. Select **OK**.

5. Open the Mailbox and put a scratch tape in the top slot.
The scratch tape will be returned to this slot when the command is complete.
6. Close the Mailbox.
The library executes a TEACH and INVENTORY command.
7. Select **OK**. When complete, a confirmation screen displays. Select **OK**.

Exercising the Picker Fingers

Use **Fingers** to exercise the picker fingers. This command is a collection of routines that manipulate the open/close and reach/retract operations of the picker fingers.

Path: **Main menu > More > Service > Library > Diags > Fingers**

The following exercises are available through the **Fingers** menu:

- Getting and putting tape cartridges into storage slots or drives
- Opening and closing and extending and retracting the fingers

Getting and Putting Tape Cartridges


Use **Get/Put** to instruct the library to get a collection of tape cartridges and move them to a different location.

Path: **Main menu > More > Service > Library > Diags > Fingers > Get/Put**

To get and put tape cartridges

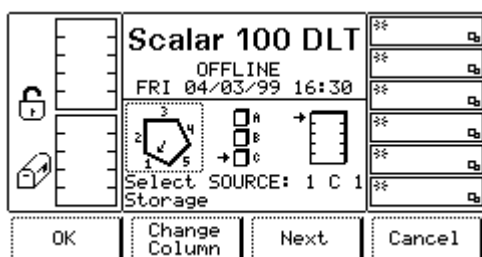
1. From the Main menu, select **More** and then select **Service**. Select **Library** and then select **Diags**. Select **Fingers** and then select **Get/Put**.

The Get/Put dialog appears

	Scalar 100 DLT		**
	OFFLINE		**
	FRI 04/03/99 16:20		**
	This test will Get and Put all media.		**
	Cycles to run : 0001		**
	Number of slots : 060		**
Starting slot : 000		**	
New start slot : No		**	
Up	Down	Next	Cancel

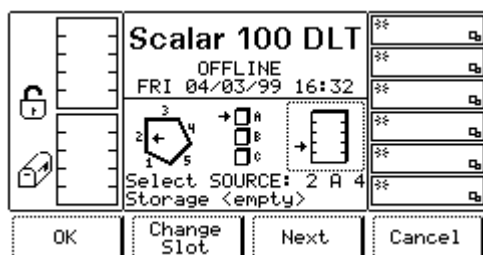
2. Use **Up**, **Down**, **Next**, and **Yes/No** to specify the following:
 - **Cycles to run** — the number of cycles to run. Possible values are 0 to 9999.
 - **Number of slots** — the number of slots to use in the cycles. Possible values are 0 to 96.
 - **Starting slot** — indicates the starting slot. This field is read-only and only changes when **New start slot** is selected.
 - **New start slot** — indicates whether you want to change the start slot or use the currently indicated slot. Possible values are **Yes** and **No**.

3. Select **OK**.
4. With **New start slot** selected, press **OK**.
5. If you did not choose to modify the start slot, the exercise runs. If you chose to select a new start slot, do the following:
 - a. With **Select Column** selected, press **Change Column** until the arrow points to the start column. Press **Next**.



- b. With **Magazine** selected, select **Change Magazine** until the arrow points to the start magazine. Press **Next**.
- c. With **Slot** selected, press **Change Slot** until the arrow points to the start slot.

The **Select SOURCE** line displays the start slot. For example, the display below has slot 2A4 selected as the source slot.



- d. Select **OK**. The exercise is run.
6. When the exercise is complete, a report displays.

Opening/Closing and Extending/Retracting

Use **Step** to manipulate the open/close and reach/retract features of the picker fingers.

Path: **Main menu > More > Service > Library > Diags > Fingers > Step**

To exercise the picker fingers

1. From the Main menu, select **More** and then select **Service**. Select **Library** and then select **Diags**. Select **Fingers** and then select **Step**.

A dialog is displayed warning that only qualified personnel should operate this feature.

2. Select **OK**.

3. Use **Open/Close** to open and close the picker fingers. Use **Extend/Retract** to extend and retract the picker fingers.
The actions are performed in real time and the screen updates to reflect the current action.
4. When finished, select **Cancel**.

Exercising the Barcode Scanner

Use **Scanner** to instruct the barcode scanner to read the barcode information on the media cartridge in front of it. Use this command in conjunction with [Moving the Picker on page 7-50](#).

Path: **Main menu > More > Service > Library > Diags > Fingers > Scanner**

To exercise the barcode scanner

1. From the Main menu, select **More** and then select **Service**. Select **Library** and then select **Diags**. Select **Fingers** and then select **Scanner**.
2. Select **Scan**.

The barcode is read and the resulting barcode number is displayed at the bottom of the dialog. If there is no tape cartridge in the slot, **BAD READ** is displayed.

Exercising the Picker Axes

Use **Picker** to manipulate the vertical and rotary axes of the library picker. You can exercise both dimensions at once or a single dimension.

Path: **Main menu > More > Service > Library > Diags > Picker**

Moving the Picker in a Motion Pattern

Use **Move** to cycle the vertical and rotary axes of the picker in a motion pattern.

Path: **Main menu > More > Service > Library > Diags > Picker > Move**

To move the picker

1. From the Main menu, select **More** and then select **Service**. Select **Library** and then select **Diags**. Select **Picker** and then select **Move**.
2. Using **Up**, **Down**, and **Next**, complete the following fields:
 - **Cycles to run** — specifies the number of move cycles. Possible values are 0 to 9999.
 - **Use vertical** — specifies whether or not to exercise the vertical axis during this test. Possible values are **Yes** and **No**.
 - **Use horizontal** — specifies whether or not to exercise the horizontal axis during this test. Possible values are **Yes** and **No**.
3. With **Use vertical** or **Use horizontal** selected, press **OK**.
4. While the exercise is running, the status is displayed on the Operator Panel.

Moving the Picker in Increments

Use **Step** to manipulate the vertical and rotary axes of the picker in incremental steps.



NOTE: This is an advanced diagnostic tool that is not intended for use during normal operation.

Path: **Main menu > More > Service > Library > Diags > Picker > Step**

To move the picker

1. From the Main menu, select **More** and then select **Service**. Select **Library** and then select **Diags**. Select **Picker** and then select **Step**.
2. A dialog is displayed warning that only qualified personnel should operate this feature. Select **OK**.
3. Using **Up**, **Down**, and **Next**, complete the following fields. The picker moves as you press these buttons.
 - **Pivot axis** — specifies the number degrees the picker will rotate. Possible values are 0 to 275 degrees.
 - **Vert. axis** — specifies how many millimeters the picker will be extended during this exercise. Possible values are 0 to the maximum height for your library.
 - **Step amount** — specifies how many tenths of millimeters the picker should step. Possible values are 1 to 100.

Sending the Picker to the Home Position

Use **Home** to send the vertical and rotary axes to their home positions.

Path: **Main menu > More > Service > Library > Diags > Picker > Home**

To move the picker

1. From the Main menu, select **More** and then select **Service**. Select **Library** and then select **Diags**. Select **Picker** and then select **Home**.
2. Select **OK**.

Exercising the Library

Use **Exercise** to access library exercises. You can run a demonstration, self test, or teach operation. These exercises are helpful when troubleshooting and when testing new configurations.

Running a Demo

Use **Demo** to run a demonstration routine. This command is helpful for testing new library configurations to ensure all the components are interacting correctly.

**CAUTION:**

This command could potentially move a cartridge into an incorrect partition, if the library has been partitioned by the host.

Path: **Main menu > More > Service > Library > Exercise > Demo**

To run a demo

1. From the Main menu, select **More**. Select **Service** and then select **Library**. Select **Exercise** and then **Demo**.
2. Use **Up**, **Down**, **Next**, **Change**, and **Yes/No** to complete the following fields:
 - **Demo Mode** — specifies the type of demonstration to run. Possible values are Cycle or Time.
 - **Cycle** — specifies running the demonstration based on the number of completed cycles.
 - **Time** — specifies running the demonstration based on time elapsed.
 - **Cycles to run** — specifies the number of cycles the demonstration will be run. This option is only available if **Cycle** was specified. Possible values are 0 to 9999.
 - **Hours to run** — specifies the number of hours to run the demonstration. This option is only available if **Time** was specified. Possible values are 2 hour increments up to 24 hours.
 - **Include Drives** — specifies whether or not to include drives in the demonstration.
 - **Mailbox** — specifies whether or not to include the Mailbox in the demonstration.
3. Select **OK**.

The demonstration runs. A status menu is displayed during the demonstration.
4. When complete, select **OK**.

Running a Self Test

Use **Self Test** to run a series of pre-programed tests that exercise the integrity of the system.

Path: **Main menu > More > Service > Library > Exercise > Self Test**

To run Self Test

1. From the Main menu, select **More**. Select **Service** and then select **Library**. Select **Exercise** and then **Self Test**.
2. Use **Up**, **Down**, **Next**, and **Yes/No** to complete the following fields:
 - **Cycles to run** — specifies the number of times to run the Self Test.
 - **Include drives** — specifies whether or not to include the drives.

3. Select **OK**.

The test runs. A status menu is displayed during the test.

4. When complete, select **OK**.

Teaching the Library

This feature instructs the library to determine what resources exist in the library, including how many drives, columns, and magazines.

Path: **Main menu > More > Service > Library > Exercise > Teach**

To run Teach

1. From the Main menu, select **More**. Select **Service** and then select **Library**. Select **Exercise** and then **Teach**.

2. Select **OK**.

The library is calibrated.

3. When complete, select **OK**.

Resetting a Drive

Use the **Reset** command if you want to reset a drive and not interfere with other library functions. There are two reset options: soft resets and hard resets. A soft reset is used in instances where you want restart a drive, for example if you want to invoke a new SCSI ID. Hard resets are used when there are drive errors.

Path: **Main menu > Command > Drives > Reset**

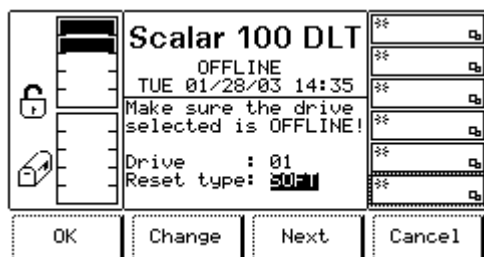
To reset a drive

1. From the Main menu, select **Command** and then select **Drives**. Select **Reset**.

2. Using **Change**, select the drive to be reset. Select **Next**.

3. Using **Change**, select the type of reset: soft or hard.

A soft reset runs the drive's power-on self test. A hard reset first turns off then restarts the drive. In most cases, a soft reset is preferable to a hard reset.



4. Select **OK**.

Servicing Drives

Use **Drives** when performing maintenance on drives. Only LTO drives can be serviced. This menu allows you to

- Discontinue or reinitialize communication with a drive (this is necessary when replacing a drive)
- Run diagnostic tests on your drive (for use by Service personnel)

Preparing a Drive

Use **Repair** when you are replacing a drive. **Repair** informs the library that the drive is going to be removed from the library. There is no communication with the drive until it is replaced.

Path: **Main menu > More > Service > Drives > (select drive) > Repair**

To prepare a drive

1. From the Main menu, select **More**. Select **Service** and then select **Drives**.
2. Specify the drive you want to replace in the **Drive** field. Select **Change Drive** until the desired drive is selected.
3. Select **Repair**.
4. Using Change, specify **Remove** or **Replace**. Select **OK**.
5. If you selected **Remove**, you can now remove the drive. If you selected **Replace**, communication with the drive is initialized.

Running Drive Diagnostic Tests

A collection of drive tests are available for LTO libraries. The drive diagnostic tests are available through the path indicated below; however, they are reserved for use by Support personnel.

- FAST Read/Write — executes a load and unload, and a read and write test.
- NORMAL Read/Write — executes a load and unload, and a read and write test.
- Media Read/Write — executes a test to ensure that a suspect cartridge and its magnetic tape are acceptable.
- Head Read/Write — executes a test to ensure that the drive's head and tape-carriage mechanics are working properly.
- Power On Self Test — executes the drive power on self-test.
- SCSI Wrap Test — executes a check on the SCSI circuitry.

Path: **Main menu > More > Service > Drives > (select drive) > Diags**

Working with Tapes and Barcodes

When working with tape cartridges, there are certain considerations that should be taken into account. For example, all tape cartridges in the library must have a barcode label. In addition, when loading your library, you should be aware of whether or not your tape cartridges are write-protected.

This section discusses these type of items in general terms. For information about what type of tape cartridges are supported for each drive type, see [Specifications on page 13-103](#).

Selecting Approved Media Types

To ensure that the library conforms with ADIC requirements for reliability, use only ADIC supplied tape cartridges.

Other certified media may be used, but it may not meet the standards of reliability established by ADIC.

Write-Protecting Tape Cartridges

All tape cartridges have a write-protect switch that prevents data from being accidentally erased or overwritten. Before inserting a tape cartridge into a library, ensure the write-protect switch is in the correct position.

Most media indicate that the tape is write-protected with a orange or red tab. Other indications include an opened or closed lock.

Tape Use Guidelines

For longer life of recorded or unrecorded cartridges, store cartridges in a clean environment under the following conditions:

- Do not drop or bang the cartridge. This can displace the tape leader, making the cartridge unusable and possibly damaging the drive.
- Keep tape cartridges out of direct sunlight and away from heaters and other heat sources.
- Store tape cartridges at temperatures between 50° F to 104° F (10° C to 40° C). For longer cartridge life, always store the cartridge in its plastic container and in room environment conditions of 72° F (±7° F) (22° C [±4° C]).
- If the tape cartridge is exposed to heat or cold extremes, stabilize the cartridge at room temperature for the same amount of time it was exposed—up to 24 hours.
- Do not place a cartridge near electromagnetic interference sources, such as terminals, motors, and video or X-ray equipment. Data on the tape can be altered.
- Store tape cartridges in a dust-free environment where the relative humidity is between 20% and 80%. For longer cartridge life, store the cartridge at 40%, ±20% relative humidity.
- Do not adhere labels to a cartridge anywhere except in the area on the front of the cartridge or the slide-in slot.

Using Barcode Labels

All tape cartridges in the library must have a barcode label that is machine readable and identifies the volume serial number.

For information on how to configure the length of barcodes read by the scanner, see [Configuring your Library on page 8-57](#).



NOTE:

Although it is recommended that cleaning tapes have barcode labels, it is not required.

Applying Barcode Labels

Barcode labels are applied to the front of the cartridge. Depending on the media type, barcode labels are either stickers that are adhered to the front of the tape cartridge or cutouts that you slide into an indentation on the front of the cartridge.



CAUTION:

Be careful not to apply barcode labels upside down.

Barcode Label Requirements

A barcode must use only uppercase letters A to Z and/or numeric values 0 to 9. Your library currently supports Code 39 type barcode labels.

In addition, barcode labels must adhere to the following requirements:

- ANSI MH10.8M-1983 Standard
- Number of digits: 5-13 (based on mode)
- Background reflection: greater than 25 percent
- Print contrast: greater than 75 percent
- Ratio: greater than 2.2
- Module: 250 mm
- Print tolerance: ± 57 mm

Additional Requirements

- Length of the rest zones: $5.25 \text{ mm} \pm 0.25 \text{ mm}$.
- No black marks should be present in the intermediate spaces or rest zones.
- No white areas should be present on the bars.

- Bars should read in a uniform direction. Nonuniform reading directions are feasible in principle, but have a detrimental effect on performance.
- Quality Testing

You will have the best scanning results if you use ADIC-supplied barcode labels.

If you want to print your own barcode labels, ensure the labels meet the requirements listed here. (You can ensure and document barcode compliance by using the Ergilaser 3000 High Density barcode measuring device, manufactured by the Laetus Company.)

If you want to purchase barcode labels from a supplier other than ADIC, the Scalar 100 supports barcode labels purchased from Engineered Data Products.

Using the Remote Management Unit

The Remote Management Unit (RMU) is a component in your library that provides remote access to the library via a Web browser. All functions listed here are available without the need of a dedicated server (or separate software).

The RMU performs the following functions:

- Provides remote operation of all library Operator Panel functions via a Web browser.
- Allows you to check the status of the system, firmware levels, and other useful information.
- Updates RMU, drive (LTO only), and Library Controller firmware.
- Supports Simple Network Management Protocol (SNMP) and acts as a SNMP-server, generating SNMP traps and responding to SNMP requests.
- Supports ADIC Library Management Information Base (MIB) version 2.0.
- Detects a power loss and generates an SNMP trap for notification.
- Enables the retrieval of library logs and library, drive, and RMU diagnostic files.
- Allows RMU configuration changes such as network, users, and date/time changes.
- Provides online access to documentation.

Figure 11-1 The Remote Management Unit

Remote Management Unit

Name: Fred (ADIC Scalar 100)

Logout | **Status** | Configuration | Firmware | Diagnostics file | Operator panel | Logs

ADIC Scalar 100 DLT

Library Status

Drive Status: Online

DLT: 6 drives

admin from 172.16.34.227

Hostname: Fred

IP Address: 172.16.38.43

MAC Address: 00:30:8C:01:19:4A

Library Serial #: ADIC111111111111

SNMP Alerts: SNMP Off

Library Firmware: 2.90.0005

RMU Firmware: 140A.00016

Help: Contents, Documentation, SNMP MIB, Support, Version

www.adic.com

Supported Browsers

The RMU supports the following browsers:

- Microsoft Internet Explorer version 5.0 and above
- Netscape Navigator versions 4.01 for Unix and 4.7X for all other environments



NOTE: In certain versions of Netscape, the Operator Panel may not appear correctly.

RMU Requirements

The RMU requires a network address that consists of an Internet Protocol (IP) address, subnet mask, and gateway IP Address.

Once these are established, input this information to the RMU via the Operator Panel. For more information, see the discussion that follows.

Setting up the RMU

Once you have established a network address for the RMU, input this information to the RMU via the Operator Panel.

Path: **Main menu > More > Setup > Library > RMU**

To configure the RMU

1. From the Main menu, select **More**. Select **Setup** and then select **Library**. Select **RMU**.
2. Using the **Up**, **Down**, and **Next** buttons, enter the IP address, subnet mask, gateway IP address, and host name.
3. When complete, press **Next** until you reach the end of the **Name** field. Press **OK**.

The screenshot shows the 'Scalar 100 DLT' Operator Panel. On the left is a vertical navigation bar with icons for a lock, a document, and a network card. The main display area shows the following information: 'Scalar 100 DLT' at the top, followed by 'ONLINE', 'THU 04/17/03 08:34', 'IP :172. 16. 38. 43', 'Sub : 55.255.248. 0', 'Gate:172. 16. 32. 2', and 'Name: Fred'. To the right of the main display are six rows of input fields, each preceded by a double asterisk (**). At the bottom are four buttons: 'OK', a blank button, 'Next', and 'Cancel'.

Starting the RMU

Before you begin using the RMU, make certain you have configured your RMU with the correct network address.

To start the RMU

1. Open a Web browser.
2. Enter the RMU IP address in your browser, excluding any leading zeros.

For example if your IP address is 182.073.056.205 on the Operator Panel, go to the following address: `http://182.73.56.205`

The RMU user interface displays.

Logging into the RMU

Some of the features of the RMU require you to log in.



NOTE: The default login and password are *admin* and *secure*, respectively.

To log into the RMU

- When prompted, enter your login name and password.

Note, the login name and password are case sensitive.

Checking Status and General Information

You can use the RMU to remotely check the status of a library and obtain general information about the library. For example, you can check drive status or get the firmware level of your library.

To check status and obtain general information

1. Click the **Status** tab.

The following information is displayed:

- **Library Status** — indicates whether the library is online or offline.
- **Drive Status** — indicates the type and quantity of tape drives in the library.
- **RMU User** — indicates the name and location of the user.
- **Hostname** — indicates the hostname used for the RMU connection.
- **IP Address** — indicates the IP address for the RMU connection.
- **MAC Address** — indicates the Media Access Control (MAC) address of the RMU. This is also the serial number of the RMU.
- **Library Serial #** — indicates the library serial number.
- **SNMP** — indicates whether the SNMP feature is on or off.
- **SNMP Alerts** — indicates whether the SNMP Alert notification feature is on or off.
- **Library Firmware** — indicates the current level of library firmware.
- **RMU Firmware** — indicates the current level of RMU firmware.

Configuring Network Parameters

You can reconfigure the hostname, IP address, subnet mask, and gateway address through the RMU. This feature requires you to login to the RMU. See [Logging into the RMU on page 11-81](#) for more information.

To configure the network parameters

1. Click the **Configuration** tab.
2. In the **Network Configuration** area, enter the new hostname, IP address, subnet mask, and gateway address.
3. Click **Submit** and review your changes (indicated in red).
4. Enter your password and click **Confirm** to complete the procedure.

The new values are saved. Note that you may need to redirect your Web browser.

Configuring SNMP

Simple Network Management Protocol (SNMP) is a set of protocols used to manage nodes on an IP network. You can configure the RMU to run a SNMP management application.

To configure SNMP

1. Click the **Configuration** tab.
2. In the **SNMP Configuration** area, do the following:
 - To enable or disable the feature, select **ON** or **OFF** in the **SNMP Enabled** drop-down.
 - To enable or disable SNMP alerts, select **ON** or **OFF** in the **Alerts Enabled** drop-down.
 - In **Manager**, enter the SNMP server address.
 - In **Public Name**, enter the name of the read-only SNMP community.
 - In **Private Name**, enter the name of the read/write SNMP community.

3. Click **Submit** and review your changes (indicated in red).
4. Enter your password and click **Confirm** to complete the procedure.

The new values are saved. Note that you may need to redirect your Web browser.

5. You will be instructed to reboot the RMU. Click **Done** to reboot.

Downloading the SNMP MIB File

The SNMP Management Information Base (MIB) file will allow an SNMP management application to understand the SNMP traps generated by the RMU. If you are running an SNMP management application and need the library MIB, you can download it via the RMU.

To download the SNMP MIB file

1. Click **SNMP MIB** in the left pane of the RMU interface.

2. Right-click **Download SNMP MIB** and click **Save Target As**.
3. Browse to your SNMP management server and click **Save**.

You will need to load the MIB file into the SNMP management application.

Configuring RMU User Accounts

You can add unique users to the RMU. Only one administrator account is allowed, which maintains the login of *admin*.

Adding/Removing Users

Only the admin account can add or remove users.

To add or remove a user

1. Click the **Configuration** tab.
2. In the **User Configuration** area, do one of the following:
 - If you are adding a user:
 - a. In the **Management Action** drop-down, click **Create User**.
 - b. In **Edit New**, enter the user name.
 - c. In **Password**, enter the login password and then confirm it in **Re-enter Password**.
 - If you are deleting a user:
 - a. In the **Management Action** drop-down, click **Delete User**.
 - b. In **Select One**, select the user you want to remove.
3. Click **Submit** and review your changes (indicated in red).
4. Enter your password and click **Confirm** to complete the procedure.

Changing a Password

At any time, you can change your RMU password. If you are the admin, you can change users' passwords.

To change a password

1. Click the **Configuration** tab.
2. In the **User Configuration** area, select **Change User Password** from the **Management Action** drop-down.
3. If not already selected, select the appropriate user account from the **Select One** drop-down.



NOTE: Only the admin can modify another user's password.

4. Click **Submit** and review your changes (indicated in red).
5. Enter your password and click **Confirm** to complete the procedure.

Configuring the Time and Date

You can configure the date and time for the RMU. The date and time will be used in the RMU log file to report when events occurred.

To configure the date and time

1. Click the **Configuration** tab.
2. Enter the date and time in the **Date and Time** area.
3. Click **Submit** and review your changes (indicated in red).
4. Enter your password and click **Confirm** to complete the procedure.

Synchronizing with an NTP server

You can connect the RMU to a network time (NTP) server to automatically set the time.

To synchronize with an NTP server

1. Click the **Configuration** tab.
2. In the **Date and Time** area, select **ON** from the **Synchronization with NTP server** drop-down menu.
3. In the **NTP Server IP Address** field, enter the IP address of the NTP server.
4. In the **Timezone** field, enter the time zone deviation for the NTP server. To get a list of timezone variants, click list of **timezones**.
5. Click **Submit** and review your changes (indicated in red).
6. Enter your password and click **Confirm** to complete the procedure.

Updating Firmware

You can update firmware for the RMU, library, and drives (LTO only). Before you update firmware, you need to have the firmware file in a location that is accessible from the RMU interface. Firmware updates can be found on www.adic.com.

To update firmware

1. Click the **Firmware** tab.
2. Select the firmware you would like to update.



NOTE: Only LTO drive firmware can be updated with the RMU.

3. Click **Browse** and browse to the location of the firmware update file.

**NOTE:**

Downloading firmware can take several minutes. For details on how long it will take to download firmware, click **some time** above the **Update Firmware** button.

4. Click **Update Firmware**.

The firmware will be updated. If the library was selected for a firmware update, it will automatically reboot when the update is complete. If the RMU was selected, you will be prompted for a reboot when the update is complete.

Viewing Diagnostic Files

From the RMU, you can view the diagnostic information for the attached library and RMU. This information can assist technical support personnel when diagnosing problems.

To view diagnostic files

1. Click the **Diagnostics** file tab.
2. Select the file you would like to view. The available options are:
 - Library Inventory Report—Provides a physical inventory of the library including drive and slot count.
 - Library Log Report—Provides command, support, and error logs for the library and RMU.
 - Complete Log Report—Provides library inventory information and command, support, and error logs for the library, RMU, and drives.
3. Click **Retrieve selected file**.

The file will be loaded.
4. Click **Display File** to view the file in a separate browser window.

Using the Operator Panel (via the RMU)

The RMU provides access to the library via a virtual Operator Panel.

To use the Operator Panel

- Click the **Operator panel** tab.

A graphical representation of the Operator Panel will be displayed. You can click the softkeys and control the library the same way that you would from the front of the library. For more information on the Operator Panel, see [Using the Operator Panel on page 5-31](#).

Viewing Logs

You can view the most current entries in the library command log without having to download the entire log file.

To view the log

- Click the **Logs** tab.

The command log is displayed with the most recent entry at the top of the list.

Getting Help

The RMU provides access to help for the following items:

- Contents—Provides a description of each of the tabs on the RMU interface.
- Documentation—Provides a link to the user documentation for the library.
- SNMP MIB—Provides information on the SNMP MIB file. For more information, see [Configuring SNMP on page 11-82](#).
- Support—Provides information on contacting technical support.
- Version—Provides the current revision level of the RMU firmware.

To get help

- Click on the item in the left pane of the RMU interface.

The information will be displayed in a separate browser window.

Troubleshooting and Help

When a failure occurs, the Scalar 100 firmware performs error recovery and reporting. Error reporting includes Service Action Codes (SACs), Operator Intervention Messages, and Operator Information Messages. All of these messages are discussed and explained here.

Service Action Codes

If a failure requires operator service, a two-byte Service Action Code (SACs) is generated and displayed on the Operator Panel. These codes indicate a specific task that should be taken. [Table 12-1 on page 12-87](#) lists each SAC and the recommended actions.

The two-byte SAC definition is generated as follows:

- **nn** represents the Service Action Code
- **xx** represents the modifier to the Service Action Code
 - **00** represents the Main Controller
 - **10** represents the Picker Controller
 - **20** represents the Display Assembly
 - **3x** represents the Drive Module
 - **x** represents the Drive ID
 - **40** represents SCSI Controller
 - **50** represents Remote Management Unit (RMU)

Table 12-1 Service Action Code Descriptions

Reported SAC	Error and Solution
01 xx	Type 1 Software errors including Microcode and Operating System errors.
	Power Off and On the Scalar 100 Library to recover from the error. Use the Rear Switch to perform this action, wait at least one minute between power Off and On.
02 xx	Type 2 Software errors including Microcode Logic and Operating System errors.
	Power Off and On the Scalar 100 Library to recover from the error. Use the Rear Switch to perform this action, wait at least one minute between power Off and On.
03 xx	Type 3 Software errors including Microcode Logic and Operating System errors.
	Power Off and On the Scalar 100 Library to recover from the error. Use the Rear Switch to perform this action, wait at least one minute between power Off and On.

Reported SAC	Error and Solution
04 xx	Type 4 Software errors (Inter Processor) including Microcode and Operating System errors.
	Power Off and On the Scalar 100 Library to recover from the error. Use the Rear Switch to perform this action, wait at least one minute between power Off and On.
05 xx	A permanent Operating System error occurred.
	Power Off and On the Scalar 100 Library to recover from the error. Use the Rear Switch to perform this action, wait at least one minute between power Off and On.
	Contact ATAC.
10 xx	Barcode scanner communications failed.
	Retry the failing operation.
	Power Off and On the Scalar 100 Library to recover from the error. Use the Rear Switch to perform this action, wait at least one minute between power Off and On.
	Contact ATAC
11 xx	Barcode scanner communication is OK, data received from the Barcode scanner is bad.
	Ensure that the barcode label was supplied by ADIC or an ADIC approved vendor.
	Contact ATAC.
13 xx	Cannot read Barcode label or the label is bad.
	Ensure that the barcode label was supplied by ADIC to an ADIC approved vendor.
	Check the cartridge labels to ensure that they meet specifications, are properly installed, and not damaged or dirty. The cartridge slots in question are displayed with the Service Action Code.
	Ensure that scan beam is not obstructed.
	Retry the failing operation.
	Power Off and On the Scalar 100 Library to recover from the error. Use the Rear Switch to perform this action, wait at least one minute between power Off and On.
	Contact ATAC.

Reported SAC	Error and Solution
14 xx	The system detects that the Serial Number is missing from its NVRAM.
	Record and reenter the System Serial Number (Using serial cable and HyperTerminal. Enter "setser" command from the HyperTerminal prompt.
	Contact ATAC.
15 xx	An intermittent scanning error was detected. During Demo, the library performs inventory after each complete demo cycle and detects a mismatch between the number of cartridges scanned and its previous database.
	Note the number of cartridges installed in the library and use the Operator Panel to compare this information with the number of cartridges reported by the library. Examine the cartridges that are installed but not reported by the library for proper cartridge labels, replace the labels if necessary. Note that if a whole column of cartridges is missing, the column fiducial label can be defective, in this case the whole storage column must be replaced.
	If all labels are correct, clear the SAC and retry the Demo program (at least five cycles).
21 xx	Contact ATAC.
	NVRAM failures.
	Check the Library configuration and re-enter all data (SCSI ID, Time/Date, Library Serial Number, etc.). For instructions on how to do this, see Configuring your Library on page 8-57 .
	Power Off and On the Scalar 100 Library a few times and see if the same error conditions re-appear. Use the Rear Switch to perform this action, wait at least one minute between power Off and On.
38 xx	Contact ATAC.
	The Remote Management Unit (RMU) can not communicate with the DHCP server.
39 xx	An external network error was detected by the Remote Management Unit (RMU).
	Ensure that the network cable is connected from the DHCP server to the RMU.
	Ensure that the RMU is configured to operate with the DHCP.
	Contact ATAC.
40 xx	The Library detects that Servo power is missing.
	Contact ATAC.

Reported SAC	Error and Solution
42 xx	A wrong library configuration is detected: the mailbox storage column is missing; also error due to drives out of order or multiple drive types installed.
	Check to make sure that the mailbox column is installed and the fiducial label is properly installed and not damaged. The fiducial label is present on both the single slot mailbox and the multi-slot mailbox. Only one drive type is installed in the library with no missing drives.
	Contact ATAC
43 xx	An unknown library configuration is detected, the barcode scanner is unable to read the fiducial label located on the storage column or storage magazine during a Teach operation.
	Ensure that the Microcode level in the Scalar 100 supports the Hardware installed. Refer to Getting Firmware and Serial Number Information on page 6-40 .
	Check for a dirty, damaged, missing or wrong fiducial label located at the storage array in the Library.
	Contact ATAC.
44 xx	An unknown fiducial label is detected during a Teach operation.
	Ensure that the Microcode level in the Scalar 100 supports the Hardware installed. Refer to Getting Firmware and Serial Number Information on page 6-40 .
	Check for a dirty, damaged, missing or wrong fiducial label where the picker is positioned.
	Contact ATAC.
46 xx	The barcode scanner detected a cartridge when one was not expected. This occurs because the magazine's fiducial label was not scanned by the library. Therefore, the library does not recognize the magazine as being installed in the column.
	This error can be caused by a dirty barcode scanner (dust or fingerprints). Clean the barcode scanner window with a lint free cloth and retry the operation.
	Check for a dirty, damaged, missing or wrong fiducial label on the magazine containing the cartridge in question.
	Contact ATAC

Reported SAC	Error and Solution
60 xx	Cannot complete the Lock/Unlock Mailbox commands.
	Run Lock Diagnostics from the Operator Panel to see if there is any mechanical bindings. Refer to Locking/Unlocking the Mailbox on page 8-63 .
	Contact ATAC.
70 xx	Failures detected in the Picker Assembly Grip Finger Open operation.
	Run Grip finger diagnostics. Refer to Exercising the Picker Fingers on page 9-67 .
	Contact ATAC.
71 xx	Failures detected in the Picker Assembly Grip Finger Close operation.
	Run Grip finger diagnostics. Refer to Exercising the Picker Fingers on page 9-67 .
	Contact ATAC.
72 xx	A Get command was issued but the sensor indicated that a cartridge is already present in the Picker Assembly.
	Look into the Picker Assembly and see if a cartridge is present. If a cartridge is found in the picker, recover the cartridge and place it in any empty slot, close the door and retry the failing operation.
73 xx	Failures detected in the Picker Assembly Finger Open/Close operations.
	Contact ATAC.
74 00	A Get command was issued but the sensor indicated that the source location is empty.
	This error can be caused by a cartridge that is not fully inserted in the storage slot above the failing slot. If this condition exists, push the cartridge into its slot and close the library door.
	Contact ATAC.
77 xx	Failures detected in the Picker Assembly during a Retract operation.
	Contact ATAC.
78 xx	A Put command was issued but the sensor indicated that the cartridge is not present in the Picker Assembly.
	Contact ATAC.

Reported SAC	Error and Solution
7A xx	Failures detected in the Picker Assembly Reach/Retract operations.
	Check to make sure that the Picker Assembly Flex cable is properly connected and seated at the Picker Control PCBA. If not routed properly, this cable can pop out of its connector when the Picker Flex cable cover is installed.
	This failure can be the result of drive not ejecting the cartridge properly so the Picker can retrieve it. Check the drive for proper cartridge ejection (the cartridge must be easily retrieved without any force), replace the drive if necessary.
	Contact ATAC
7C xx	Failures detected in the Picker Assembly Reach operation.
	Check for obstruction in the slot. Obstruction can be in the form of: <ul style="list-style-type: none"> • an unlabeled cartridge • a cartridge in the slot during a Put operation. • the slot wall in the magazine is too tight. Remove the obstruction or replace the magazine, close the door and retry the failing operation.
	Contact ATAC.
7E xx	Failure detected while pushing a cartridge into a Tape drive feed slot.
	Check the cartridge for any physical damage.
	Replace the failing Drive Module.
80 xx	Failures detected in the Rotary-axis Servo system.
	Contact ATAC.
81 xx	Failures detected in the Y-axis Servo system.
	Contact ATAC.
82 xx	An unexpected Motion Control condition was received.
	Contact ATAC.
83 xx	The Locate Fiducial Command failed with no target found. This failure happens most likely during an initial installation of the Library Subsystem.
	Check and clean all Teach Fiducial labels
	Contact ATAC.

Reported SAC	Error and Solution
89 xx	Failure was detected while communicating with the Motion Controllers.
	Contact ATAC.
8A xx	The returned sense indicated that a motion command completed sooner than expected.
	Check the Y axis for binding. Binding can be caused by an object that prevents the Y axis from homing and reaching its target correctly.
	Contact ATAC.
8B xx	Servo Failures detected in the Rotary and/or Reach axis.
	Contact ATAC.
93 xx	A failure was detected in the drive communication hardware within the Library: the Library cannot communicate with one or more drives (note the physical location of the failing drive, this information is presented with the SAC).
	If the accompanying message indicated that the Library cannot communicate with one specific tape drive, ensure that the tape drive is properly installed in the drive slot.
94 xx	Communication was previously established between the Library and the tape drive but the Library detected that communication is no longer present or the drive status is not as expected.
	Ensure that the failing Drive Module is properly installed and powered On. Check for a cartridge in the failing tape drive that prevents the drive from becoming Ready. If a cartridge is present, eject the cartridge and retry the operation. If the operation continues to fail, replace the Drive Module.
	Contact ATAC.
95 xx	The Picker Assembly delivered a cartridge to a tape drive but the drive does not confirm tape loading status. The “xx” part of the SAC identifies the drive.
	Retry the operation by manually loading a cartridge into the tape drive. Replace the failing Drive Module if this operation failed.
	Contact ATAC.
98 xx	The firmware installed on the tape drive is not supported by the library. The “xx” part of the SAC identifies the drive
	Replace the Tap Drive Module with a certified spare part.

Reported SAC	Error and Solution
A0 xx	Communication is not established between the Main Controller PCBA and the auxiliary controller PCBA's in the library.
	Contact ATAC.
A1 xx	Communication was established but has been lost between the Main Controller PCBA and the auxiliary controller PCBA's in the library.
	Contact ATAC.
A2 xx	Communication was initially established but is now lost between the Main Controller PCBA and the Picker Control PCBA.
	Contact ATAC.
A3 xx	Communication was initially established but is not lost between the Main Controller PCBA and the Display Control PCBA.
	Contact ATAC.
D2 xx	The Library detected that a fan has failed in one of the DC Power Supplies.
	If this Library has only one DC Power Supply, replace the DC Power Supply.
	If this Library has two DC Power Supplies, listen to the fan located on the back of each Power Supply. Replace the Power Supply that does not have the fan running.
E0 xx	A cartridge is stuck in the Picker Assembly, Operator Intervention is required to remove the cartridge from the Grip fingers.
	Remove the cartridge.
E1 xx	The mailbox door is not fully closed.
	Close the mailbox door
E2 xx	The front door is not fully closed, Operator Intervention is required to close the door.
	Close the front door.

Reported SAC	Error and Solution
E7 xx	The Picker Assembly detected that a cartridge is not present in the Grip fingers. The cartridge may not be seated properly in the Grip fingers or the Get operation is not successful. Locate the cartridge in question.
	If the cartridge is not properly seated in the grip fingers. Remove the cartridge, insert it in any empty slot and retry the operation.
	If the cartridge is not in the Picker but located in its original slot, the cartridge may be seated too tightly in the slot. Replace the magazine, re-inventory and retry the operation.
	Contact ATAC.
E8 xx	During a put cartridge after a successful Get command, the Picker Assembly detected that the cartridge is no longer present in the Grip fingers. Locate the missing cartridge.
	If a cartridge is found, recover the cartridge, re-inventory the Library and retry the operation.
	Contact ATAC.
EB xx	A invalid library configuration was detected: the AIT Drive Modules are not installed in the allowable configurations.
	Check to make sure that AIT Tape Drive Modules are installed as specified in Procedure Installing/Removing a Drive on page 4-21 . Drive Module 1 must be installed starting at slot 2 of the drive column and additional Modules occupying drive slots (3 to 5) moving upward with no gap between Modules.
FB xx	Preventive Maintenance is required.
	Contact ATAC

Operator Intervention Messages

When Operator intervention is required, Operator Intervention messages display on the Operator Panel.

Operator Intervention messages are up to four lines in length. The third and/or fourth lines may contain variable information specific to the message. For SAC indications, see [Service Action Codes on page 12-87](#).

Table 12-2 Operator Intervention Messages

Message Lines	Variables
Alert not found. Press OK.	None
-=>ERROR!<=- Initialization Error Code: 0x%Y	%Y = 4 digit error modifier
-=>PERM ERROR!<=- CALL FOR SERVICE SAC :%X Code:0x%Y	%X = 2 digit hex %Y = 4 digit error modifier
-=>PERM ERROR!<=- SYSTEM WILL REBOOT SAC :%X Code:0x%Y	%X = 2 digit hex %Y = 4 digit error modifier
->SYSTEM REBOOTED<- NEW CODE LOADED Version %X.%YY.%ZZZZ	current version %X = 1 digit major rev %Y = 2 digit minor rev %Z = 4 digit minor rev
->SYSTEM REBOOTED<- RECOVERED FROM ERROR SAC :%X Code:0x%Y	%X = 2 digit hex %Y = 4 digit error modifier
->SYSTEM REBOOTED<- CALL FOR SERVICE SAC :%X Code:0x%Y	%X = 2 digit hex %Y = 4 digit error modifier
->TOO MANY ERRORS!<- CALL FOR SERVICE SAC :%X Code:0x%Y	%X = 2 digit hex %Y = 4 digit error modifier
INTERVENTION NEEDED! Close the mailbox to complete the action.	None
INTERVENTION NEEDED! Unexpected door open detected. Make sure the door is closed	None
INTERVENTION NEEDED! Single-ended device detected on this Differential bus.	None

Message Lines	Variables
INTERVENTION NEEDED! Check SCSI bus port0 connector and/or termination.	None
INTERVENTION NEEDED! Remove cartridge in picker and return to storage.	None
BAD MEDIA Cannot get type. Please label media. Slot [%X %Y %Z]	%X = column number %Y = magazine number %Z = row number
INTERVENTION NEEDED! Remove cartridge from slot. Slot [%X %Y %Z]	%X = column number %Y = magazine number %Z = row number
UPSIDE DOWN MEDIA Ensure cartridge is in slot properly. Slot [%X %Y %Z]	%X = column number %Y = magazine number %Z = row number
Slot IS OBSTRUCTED Please check to see if slot is empty. Slot [%X %Y %Z]	%X = column number %Y = magazine number %Z = row number
Slot IS EMPTY Please check to see if slot is full. Slot [%X %Y %Z]	%X = column number %Y = magazine number %Z = row number
DRIVE COMM FAILED Please verify drive communication path. Drive %N [%X %Y %Z]	%N = drive number %X = column number %Y = magazine number %Z = row number
DRIVE SCSI ID FAILED Please verify drive SCSI id setting for Drive %N [%X %Y %Z]	%N = drive number %X = column number %Y = magazine number %Z = row number
TAPE PUSH FAILED Please remove tape from drive. Drive %N [%X %Y %Z]	%N = drive number %X = column number %Y = magazine number %Z = row number
DRIVE INIT FAILED Please correct drive initialization for Drive %N [%X %Y %Z]	%N = drive number %X = column number %Y = magazine number %Z = row number

Message Lines	Variables
DRIVE CLEAN FAILED A cleaning operation failed to clean Drive %N [%X %Y %Z]	%N = drive number %X = column number %Y = magazine number %Z = row number
INVALID LABEL Please check media for valid label Slot [%X %Y %Z]	%X = column number %Y = magazine number %Z = row number
DUPLICATE LABEL Please check volsters at element address %X and %Y	%X = element address %Y = element address
SER NUMBER MISSING Please enter the system serial number via the monitor.	None
One or more drives has downlevel firmware. You may wish to update these drives. See User's Guide	None
Your library firmware versions do not match. Download the latest version to the library.	None
The Use-Count must be less than the Max-Count. Value Range : 0-99	None
AutoClean is disabled. Access is denied. Use AutoClean's Setup menu to enable.	None
No Fixed cleaning slots installed. AutoClean access is denied.	None
You are changing the Mailbox configuration AutoClean will automatically be disabled.	None
CLEAN TAPE MISSING A previously defined tape is missing: %X	%X = cartridge number
CLEAN TAPE EXPIRED Please remove the cleaning tape number %X	%X = cartridge number

Message Lines	Variables
No cleaning tape in cleaning slot %X Write down data. Will remove record. Use-Count : %Y Max-Count : %Z	%X = slot number %Y = use-count number %Y = max-count number
Cleaning Power-Out Recovery failed for slot %X. Write down data and remove tape Use-Count : %Y Max-Count : %Z	%X = slot number %Y = use-count number %Y = max-count number
No record for existing cleaning tape. Remove cleaning tape from slot %X manually and insert it via the front panel.	%X = slot number
Cleaning tape %X has expired. Export the cleaning tape via the front panel. See User's Guide	%X = cartridge number
Your cleaning tapes are expired or not in the system. Please import a new cleaning tape.	None
%X of cleaning tape failed. Tape should not be in target position.	%X = Import or Export
There is no cleaning slot available for importing new cleaning tapes.	None
Invalid cleaning tape inserted.	None
WARNING - There are no cleaning tapes available in any of your cleaning cells to perform cleaning.	None
There is no clean-ing tape available in cleaning cell %X to perform cleaning.	%X = slot number

Message Lines	Variables
There is no tape in [1 A 1]. Please insert a cleaning tape and retry import.	None
Mailbox is configured as storage. AutoClean may not be enabled.	None

Operator Information Messages

Operator Information Messages are messages that display on the Operator Panel and give the library status. [Table 12-3 on page 12-100](#) explains the variables associated with the Operator Information messages.

Table 12-3 Operator Information Messages

Message Lines	Variables
INITIALIZING	None
OFFLINE	None
ONLINE	None
HOMING PICKER	None
TEACHING COLUMN [%X]	%X = column number
SCANNING COLUMN [%X]	%X = column number
INITIALIZING DRIVES	None
GOING READY	None
DOOR IS OPEN	None
PICKER HOME FAIL	None
PICKER NOT HOME	None
GOING ONLINE	None
GOING OFFLINE	None
-=>ERROR!<=-	None
REBOOTING	None
CARTRIDGE RECOVERY	None
CARTRIDGE IN PICKER	None
SELF TEST FAILED	None

Interpreting Drive LEDs

For information on interpreting drive LEDs, go to the drive manufacturer's website and download the latest drive manual.

Getting More Information

If you want more information about your Scalar 100, contact the ADIC Technical Assistance Center or go to the ADIC or Scalar 100 website.

ADIC Technical Assistance Center

If problems cannot be solved with the aid of this document or if training is desired, contact the ADIC Technical Assistance Center (ATAC).

In the USA:	800.827.3822
Outside the USA, toll free:	00.800.9999.3822
Internet:	www.adic.com

Scalar 100 Website

For the latest information and accessories on the Scalar 100, visit the product website at www.adic.com/scalar100. The most recent versions of all documents are also located here.

Specifications

Depending on your drive type, many physical characteristics of your library will differ. The following sections provide specific information about your library, including cartridge capacity and allowed tape cartridges.

Tape Cartridge Capacity

The tape cartridge capacity of the Scalar 100 is determined by the media type. The maximum cartridge configuration includes a bulk load Mailbox feature.

Table 13-1 Tape Cartridge Capacity

Media Type	Magazine Capacity	Number of Tape Cartridges in Standard Mailbox	Number of Tape Cartridges in Bulk Load Mailbox	Total Number of Tape Cartridges ^a (With a Bulk Load Mailbox)
AIT	8	2	16	96
DLT/SDLT	5	1	10	60
LTO	6	1	12	72

a. These values do not include three additional cleaning slots.

Drive Capacity

The drive capacity is determined by the type of library. The following table shows the number of drives for each type of library.

Table 13-2 Number of Allowed Drives

Drive Type	Number of Allowed Drives
AIT	2, 4, 6, or 8
DLT/SDLT	1 to 6
LTO	1 to 6

Allowed Tape Cartridges and Storage Capacity

For each drive type, different tape cartridges are supported, resulting in different storage capacities and transfer rates.

The following sections provide information on what type of tape cartridges can be used for each drive type. Tape cartridges written in formats that are not supported by the installed drives should not be introduced into the Scalar 100.

AIT

Refer to [Table 13-3 on page 13-104](#) for each AIT tape cartridge compatibility with each AIT tape drive and native storage capacity.

Table 13-3 Allowed AIT Tape Cartridges and Native Capacity

		AIT Tape Cartridge Types	
		AIT-2	AIT-3
AIT Tape Drive Types	SDX-500C AIT-2 LVD	25G, 36G, 50G	Not Supported
	SDX-510C AIT-2 HVD	25G, 36G, 50G	Not Supported
	SDX-700C AIT-3 LVD	25G, 36G, 50G	25G, 36G, 50G, 100G

SDLT/DLT

Refer to [Table 13-4 on page 13-105](#) for each SDLT/DLT tape cartridge compatibility with each SDLT/DLT tape drive and native storage capacity.



NOTE: A DLT cleaning tape cannot be used in an SDLT drive.



CAUTION: If a SDLT-220 drive overwrites a 320-formatted tape, all data on that tape is lost. This includes any attempt to space past the data written with the SDLT-220 drive and read the original data.

Table 13-4 Allowed SDLT/DLT Tape Cartridges and Native Capacity

		DLT tape III	DLT tape IIIXT	DLT tape IV	SDLT tape I
SDLT/DLT Drive Types	DLT-7000	2.6, 6, 10G	15G	20/35G	Not supported
	DLT-8000	10G	15G	30/35/40G	Not supported
	SDLT-220	Not supported and may damage drive	Not supported and may damage drive	20/35/40G (read-only)	110G
	SDLT-320	Not supported and may damage drive	Not supported and may damage drive	20/35/40G (read-only)	160G ^a

a. The SDLT 320 drive will read and write to 220-formatted tapes at SDLT 220 speeds.

LTO

Refer to [Table 13-5 on page 13-105](#) for each LTO tape cartridge compatibility with each LTO tape drive and native storage capacity.

Table 13-5 Allowed LTO Cartridges and Native Capacity


		LTO Tape Cartridge Types	
		Generation 1 (LTO-1)	Generation 2 (LTO-2)
LTO Tape Drive Types	Ultrium Internal Tape Drive — Generation 1 (LVD and HVD)	100 GB	Not Supported
	Ultrium 2 Tape Drive — Generation 2 (LVD)	100 GB ^a	200 GB

a. LTO-1 tape cartridges are read/write compatible with LTO-2 drives.

Regulatory Notices

The regulatory notices for this library are provided below.

Federal Communication Commission Notice (USA only)

ADIC libraries are classified by the Federal Communications Commission (FCC) for Class B digital devices. However, the inclusion of certain options can change the rating of some configurations to Class A. To determine which classification applies to your library, examine all FCC registration labels located on the bottom or back panel of your library or on installable components. If any one of the labels carries a Class A rating, your entire system is considered to be a Class A digital device. If all labels carry either the Class B rating distinguished by either an FCC ID number or the FCC logo, (), your system is considered to be a Class B digital device.

Once you have determined your system's FCC classification, read the appropriate FCC notice. Note that FCC regulations provide that changes or modifications not expressly approved by ADIC could void your authority to operate this equipment.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- This device may not cause harmful interference.
- This device must accept any interference received, including interference that may cause undesired operation.

In compliance with FCC regulations, the following information is provided on the device or devices covered in this document.

FCC Declaration of Conformity

Product Name: Scalar 100
Model Number: SC100
Company Name: **A**dvanced **D**igital **I**nformation **C**orporation
PO Box 97057
Redmond, WA 98073-9757 USA
(425) 881-8004

Class A

This equipment has been tested and found to comply with the limits for a Class A digital device pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the manufacturer's instruction manual, may cause harmful interference with radio communications.

Operation of this equipment in a residential area is likely to cause harmful interference, in which case you will be required to correct the interference at your own expense.

Class B

This equipment has been tested and found to comply with the limits for a Class B digital device pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the manufacturer's instruction manual, may cause interference with radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, you are encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and the receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/television technician for help.

IC Notice (Canada Only)

Most tape libraries are classified by the Industry Canada (IC) Interference-Causing Equipment Standard #3 (ICES-003) as Class A digital devices. To determine which classification (Class A or B) applies to your tape library, examine all registration labels located on the bottom or the back panel of your library. A statement in the form of "IC Class A ICES-3" or "IC Class B ICES-3" will be located on one of these labels.

Note that Industry Canada regulations provide that changes or modifications not expressly approved by the tape library manufacturer could void your authority to operate this equipment.

This Class A (or Class B, if so indicated on the registration label) digital apparatus meets the requirements of the Canadian Interference-Causing Equipment Regulations.

Cet appareil numérique de la Classe B (ou Classe A, si ainsi indiqué sur l'étiquette d'enregistrement) respecte toutes les exigences du Règlement sur le Matériel Brouilleur du Canada.

EN 55022 Compliance (Czech Republic Only)

This device belongs to category A devices as described in EN 55022, unless it is specifically stated that it is a category B device on the specification label. The following applies to devices in category A of EN 55022 (radius of protection up to 30 meters). The user of the device is obliged to take all steps necessary to remove sources of interference to telecommunication or other devices.

Pokud není na typovém štítku počítače uvedeno, že spadá do třídy A podle EN 55022, spadá automaticky do třídy B podle EN 55022. Pro zařízení zařazená do třídy A (ochranné pásmo 30m) podle EN 55022 platí následující. Dojde-li k rušení telekomunikačních nebo jiných zařízení, je uživatel povinen provést taková opatření, aby rušení odstranil.

CE Notice

Marking by the symbol **CE** indicates compliance of this tape library to the EMC (Electromagnetic Compatibility) directive of the European Community. Such marking is indicative that this tape library meets or exceeds the following technical standards:

EN 55022:1998—Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment. This system is an EN 55022 Class A device.

EN 50082-1—"Information technology equipment - Immunity characteristics Limits and methods of measurements."

EN 61000-3-2—Harmonic current emissions test.

EN 61000-3-3—Voltage fluctuations and flicker in low-voltage supply systems test.

EN 61000-4-2—Electrostatic discharge immunity test.

EN 61000-4-3—Radiated, radio-frequency, electromagnetic field immunity test.

EN 61000-4-4—Electrical fast transient/burst immunity test.

EN 61000-4-5—Surge immunity test.

EN 61000-4-6—Immunity to conducted disturbances, induced by radio-frequency fields.

EN 61000-4-8—Power frequency magnetic field immunity test.

EN 61000-4-11—Voltage dips, short interruptions and voltage variations immunity test.

EN 60825-1: 1996 "Safety of Laser Products," if applicable.

EN 60950:1992 + Amd.1:1993 + Amd.2:1993 with considerations to Amd.3:1995

"Safety of Information Technology Equipment including Electrical Business Equipment."

VCCI Notices (Japan Only)

This is a Class A product based on the standard of the Voluntary Control Council for Interference by Information Technology Equipment (VCCI). If this equipment is used in a domestic environment, radio disturbance may occur, in which case, the user may be required to take corrective actions.

Note that VCCI regulations provide that changes or modifications not expressly approved by the tape library manufacturer could void your authority to operate this equipment.

この装置は、情報処理装置等電波障害自主規制協議会（VCCI）の基準に基づくクラス A 情報技術装置です。この装置を家庭環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。

Declaration of Conformity

The signed Declaration of Conformity is on file with Advanced Digital Information Corporation, 17275 NE 67th Court, Redmond, Washington 98052, and ADIC Europe, ZAC des Basses Auges 1, rue Alfred de Vigny, 78112 Fourqueux, France.

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